

SONY®

DIGITAL AUDIO RECORDER

PCM-3402



MAINTENANCE MANUAL

2nd Edition (Revised 5)

Serial No. 10501 and Higher

SONY.

DIGITAL AUDIO RECORDER

PCM-3402

SUPPLEMENT-5

Please file this supplement with your PCM-3402 Maintenance Manual.

1st Edition (Part No. 4-920-647-01)
1st Edition (Revised 1) (Part No. 4-920-647-02)
2nd Edition (Part No. 4-920-647-11)
2nd Edition (Revised 1) (Part No. 4-920-647-12)
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DIGITAL 
MAINTENANCE MANUAL

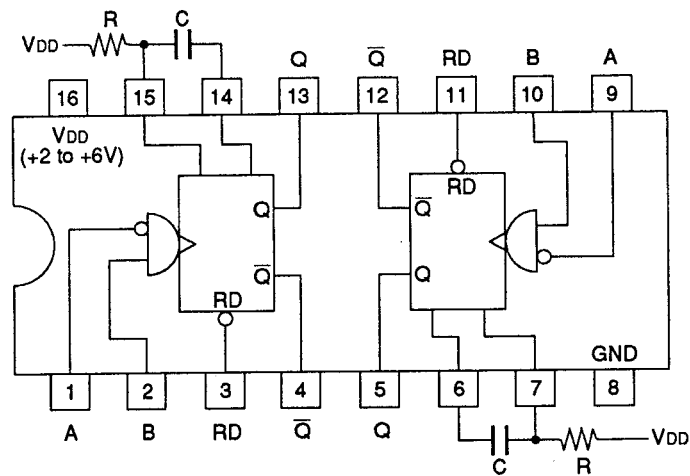
PCM-3402 (UC, EK)
9-976-708-01

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Monostable-multivibrator IC was changed.
 Former and new ICs differ in the pulse width.
 Therefore, when IC is replaced, the resistor has to be changed to correct the pulse width.

Former IC			New IC		
P/N	Name	Pulse width	P/N	Name	Pulse width
8-759-202-86	TC74HC123P	$CR \times 0.46$	8-759-239-47	TC74HC123AP	$CR \times 1.0$
8-759-203-08	TC74HC221P	$CR \times 0.7$	8-759-239-59	TC74HC221AP	$CR \times 1.0$



(Former)**(New)****CPU-34 BOARD**

ICC7	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
R15	1-249-437-11	RES, CARBON 47 K 1/4 W	→	1-249-433-11	RES, CARBON 22 K 1/4 W
R28	1-249-433-11	RES, CARBON 22 K 1/4 W	→	1-249-429-11	RES, CARBON 10 K 1/4 W
ICF7	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
R23	1-249-437-11	RES, CARBON 47 K 1/4 W	→	1-249-433-11	RES, CARBON 22 K 1/4 W
R24	1-249-437-11	RES, CARBON 47 K 1/4 W	→	1-249-433-11	RES, CARBON 22 K 1/4 W

CTL-1 BOARD

ICA10	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
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DIO-2 BOARD

ICD1	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
R6	1-249-429-11	RES, CARBON 10 K 1/4 W	→	1-249-425-11	RES, CARBON 4.7 K 1/4 W
ICK10	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
R33	1-247-887-00	RES, CARBON 220 K 1/4 W	→	1-249-441-11	RES, CARBON 100 K 1/4 W
R34	1-247-887-00	RES, CARBON 220 K 1/4 W	→	1-249-441-11	RES, CARBON 100 K 1/4 W
ICK11	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
R40	1-247-903-00	RES, CARBON 1 M 1/4 W	→	1-247-895-00	RES, CARBON 470 K 1/4 W

IF-151 BOARD

ICJ6	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
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IF-153 BOARD

ICC11	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
ICD11	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP

MCK-1 BOARD

ICB10	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
ICD3	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
C15	1-108-794-11	CAP, FILM 0.0015 50 V	→	1-130-470-00	CAP, FILM 820 PF 50 V
ICF3	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
C18	1-102-116-00	CAP, CERAMIC 680 PF 50 V	→	1-102-113-00	CAP, CERAMIC 390 PF 50 V
ICG3	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
C16	1-101-880-00	CAP, CERAMIC 47 PF 50 V	→	1-102-961-00	CAP, CERAMIC 27 PF 50 V

(Former)**(New)****MDC-1 BOARD**

ICN1	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
ICN2	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
ICN3	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP

SEP-1 BOARD

ICN1	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
R5	1-247-883-00	RES, CARBON 150 K 1/4 W	→	1-249-439-11	RES, CARBON 68 K 1/4 W
R12	1-247-883-00	RES, CARBON 150 K 1/4 W	→	1-249-439-11	RES, CARBON 68 K 1/4 W
ICN2	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
R6	1-247-883-00	RES, CARBON 150 K 1/4 W	→	1-249-439-11	RES, CARBON 68 K 1/4 W
R7	1-247-883-00	RES, CARBON 150 K 1/4 W	→	1-249-439-11	RES, CARBON 68 K 1/4 W
ICN3	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
R8	1-247-883-00	RES, CARBON 150 K 1/4 W	→	1-249-439-11	RES, CARBON 68 K 1/4 W
R9	1-247-883-00	RES, CARBON 150 K 1/4 W	→	1-249-439-11	RES, CARBON 68 K 1/4 W
ICM3	8-759-202-86	TC74HC123P	→	8-759-239-47	TC74HC123AP
R3	1-247-883-00	RES, CARBON 150 K 1/4 W	→	1-249-439-11	RES, CARBON 68 K 1/4 W
R4	1-247-883-00	RES, CARBON 150 K 1/4 W	→	1-249-439-11	RES, CARBON 68 K 1/4 W

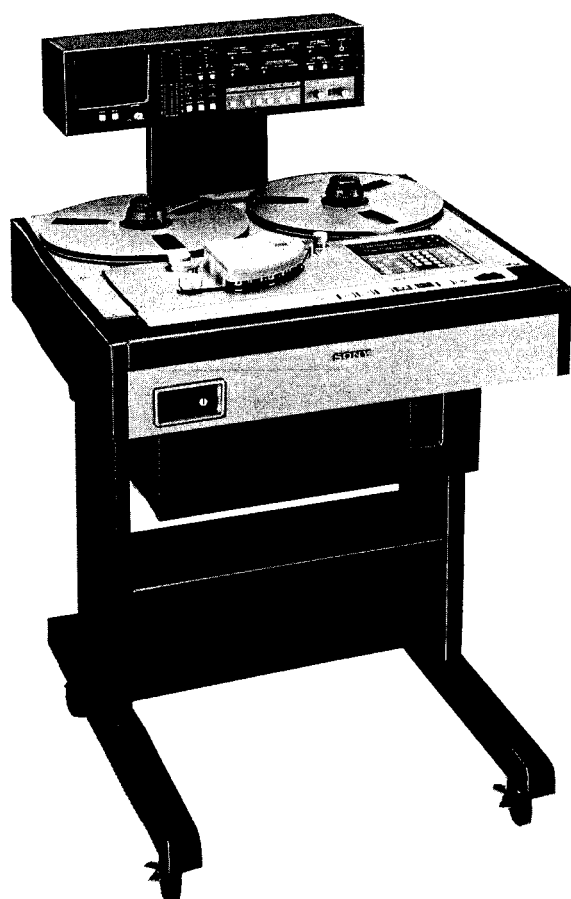
TPC-1 BOARD

ICB3	8-759-202-86	TC74CH123P	→	8-759-239-47	TC74HC123AP
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MAINTENANCE MANUAL

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Serial No. 10501 and Higher

WARNING

For the customers in the USA

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Important—To insure that the complete system (including this peripheral) is capable of complying with the FCC requirements, it is recommended that the user make sure that the individual equipment of the complete system has a label with one of the following statements.

"This equipment has been tested with a Class A Computing Device and has been found to comply with Part 15 of FCC rules."

—or—

"This equipment complies with the requirements in Part 15 of FCC rules for a Class A Computing Device."

—or equivalent.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a computing device pursuant to Subpart J of Part 15 of FCC Rules.

For the customers in Canada

This apparatus complies with the Class A limits for radio noise emissions set out in Radio Interference Regulations.

Pour les utilisateurs au Canada

Cet appareil est conforme aux normes Classe A pour bruits radioélectriques, spécifiés dans le Règlement sur le brouillage radioélectrique.

Changing the voltage selector may require the use of a different line cord or attachment plug, or both.

To reduce the risk of fire or electric shock, refer servicing to qualified service personnel.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 3.5 mA. Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 5.25V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 20 V AC range are suitable. (See Fig. A)

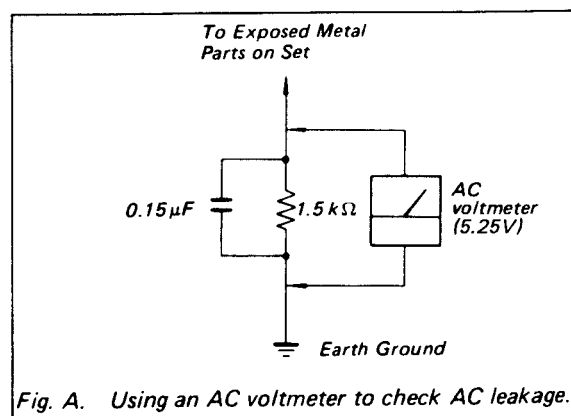


Fig. A. Using an AC voltmeter to check AC leakage.

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
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


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SECTION 1

SERVICE INFORMATION

1-1. GENERAL PRECAUTIONS

1-1-1. Removing and Connecting Boards and Connectors

Always switch off the power for the PCM3402 before removing or installing any boards or connectors.

Installing or removing boards or connectors with the power on may destroy electrical components.

1-1-2. Head Cleaning

Always clean the D/REC head and the D/PB head before adjusting the electromagnetic conversion system (the REC-1 board, the DET-4 board, and the PA-57 board). If you make the adjustments with the heads dirty, you can adjust to incorrect values or may find it impossible to obtain good results.

Items needed for cleaning the heads

- . Cleaning sheet (leather):
Part No. 2-034-697-00
- . Ethyl alcohol

Cleaning method

When cleaning the head always use a cleaning piece which has been slightly damped by the ethyl alcohol and has been allowed to dry for several seconds. Clean the head gently by moving the cleaning piece horizontally.

NOTE: Do not move the cleaning piece vertically along the head. Doing so can damage the head.

1-1-3. Tapes for Inspection and Adjustment

The following tapes are necessary for inspecting and adjusting the PCM-3402:

(1) **Alignment Tape AR3402-1**

(Sony Part No. 8-960-080-51)

For adjusting the head azimuth, head height, head contact (digital only), AUX track level, digital track equalizer, error rate, Servo Gain, etc.

(See the table below.)

(2) **Standard Blank Tape for Recording CLC-DAQ**

(Sony Part No. 8-873-005-24)

For adjusting the REC-1, PA-57 and DET-4 boards

In addition to these reference tapes, a normal blank tape is necessary for the following adjustments.

(3) **Adjusting the tape path system**

(tension arm, guide rollers, tape shifter, tape tension, etc.)

(4) **Verifying the correction capacity, Punch IN/OUT, etc.**

Note: The tape used for (3) may have its edges and surface damaged during the adjustment, so it is best to keep a separate tape just for adjusting the tape-path system.

The tape used for (4) must be brand-new or in similar condition.

Contents of the PCM-3402 Alignment Tape
(The contents subject to change without notice.)

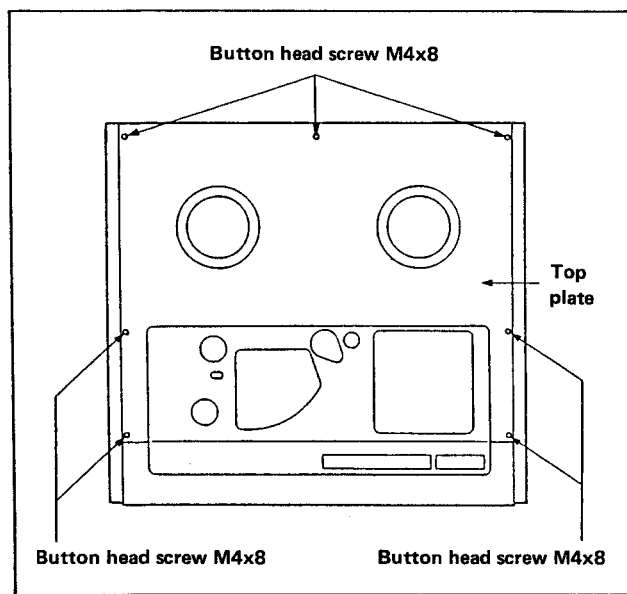
LOCATE TIME	REC. SIGNAL	DESCRIPTION
[Fs=48 kHz & Tape Speed=7.5 IPS: REF. SPEED]		
0:00	----	
	BLANK (3 min.)	*****
3:00	----	
	CTL SIG. (4 min.)	REF. TAPE SPEED 0%
7:00	----	(Tape Speed=15 IPS)
	CTL SIG. (4 min.)	ALIGNMENT SPEED+0.2%
11:00	----	
	CTL SIG. (4 min.)	ALIGNMENT SPEED-0.2%
15:00	----	
	BLANK (30 sec.)	*****
15:30	----	
	8 kHz (5 min.)	D-PB AZIMUTH
20:30	----	
	96 kHz (5 min.)	D-PB HEIGHT
25:30	----	
	125 Hz (5 min.)	A-R/P AZIMUTH
30:30	----	& HEIGHT
	8 kHz (5 min.)	D-REC AZIMUTH
35:30	----	
	96 kHz (8 min.)	D-REC HEIGHT
43:30	----	& D-PB UNIFORMITY
	BLANK (30 sec.)	*****
44:00	----	
	1 kHz+4 dBm (2 min.)	AUX TRACK REF. LEVEL
46:00	----	
	1 kHz+4 dBm (4 min.)	CTL & DATA TRACK PRE ADJ.
50:00	----	
	1 kHz+4 dBm (6 min.)	CRC BLOCK ERR. CHECK
56:00	----	

1-2. EXTERNAL CASE REMOVAL

1-2-1. Top Plate and Ornamental Panel

Remove the seven 4x8 button head screws, then pull the top plate up and away as is. (See the figure below.)

Remove the lug of the ground lead.



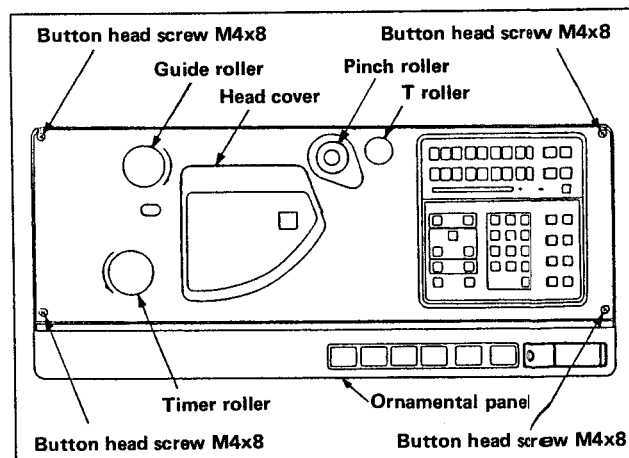
Top plate removal

Remove the four 4x8 button head screws, then remove each cap on the timer roller, guide roller, pinch roller and T roller. Pull the four rollers up and away. (See the figure below.)

Remove the lug of the ground lead.

Holding the head cover, pull up to remove the ornamental panel.

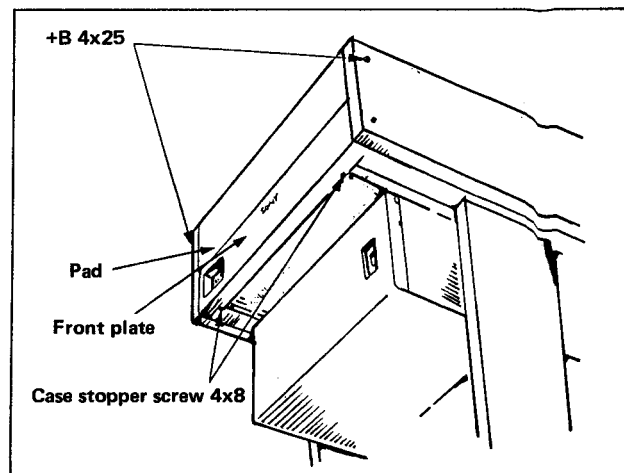
Note: The ornamental panel can be removed even if the rollers are not removed, but we recommend to remove the ornamental panel after removing the rollers not to damage the rollers.



Ornamental panel removal

1-2-2. Pad and Front Plate

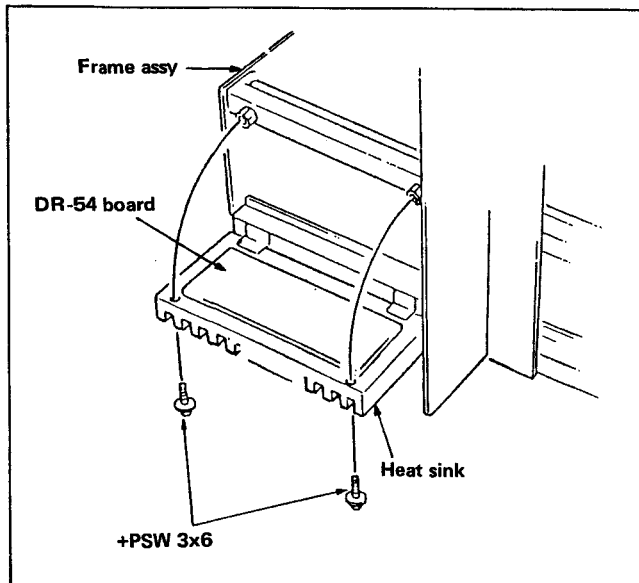
Remove the two +B4x25 screws and the two 4x8 screws. (See the figure below.) The pad and the front plate are a single unit, so this unit can be removed by pulling it forward.



Pad and front plate removal

1-2-3. DR-54 Board (Motor Drive) Removal

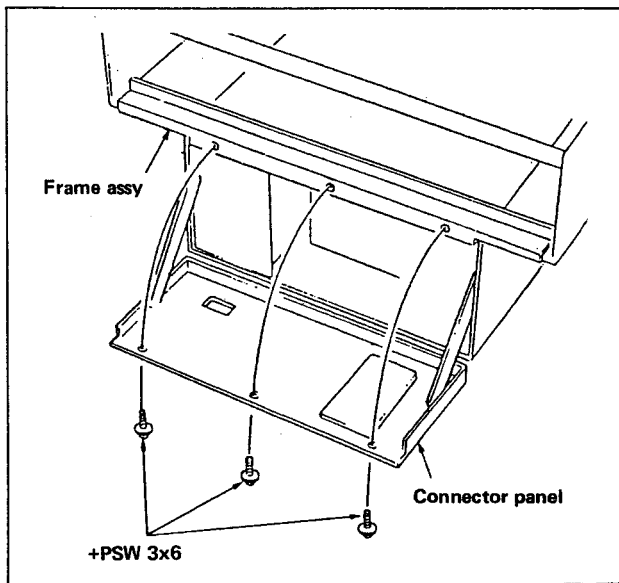
Remove the two +PSW3x6 screws and open the heat sink with DR-54 board.



DR-54 board removal

1-2-5. Connector Panel Removal

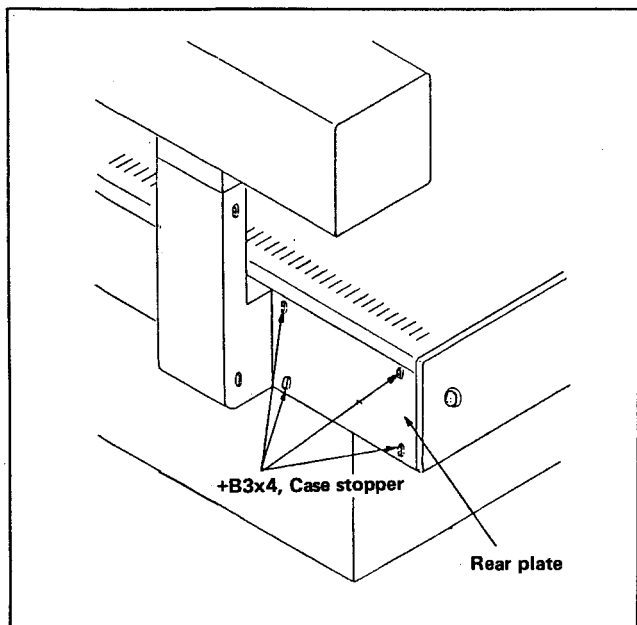
Remove the three +PSW3x6 screws, and open the connector panel.



Connector panel removal

1-2-4. Rear Plate (For IF-151 board) Removal

Remove the four +B3x4 screws to take off the rear plate.

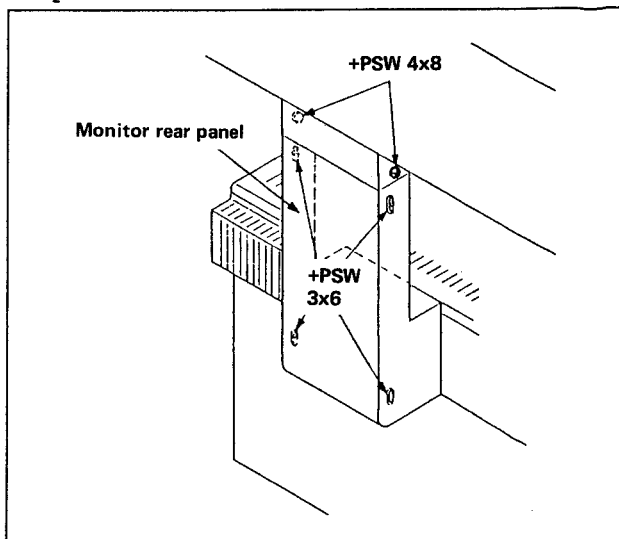


Rear plate removal

1-2-6. Monitor Rear Panel

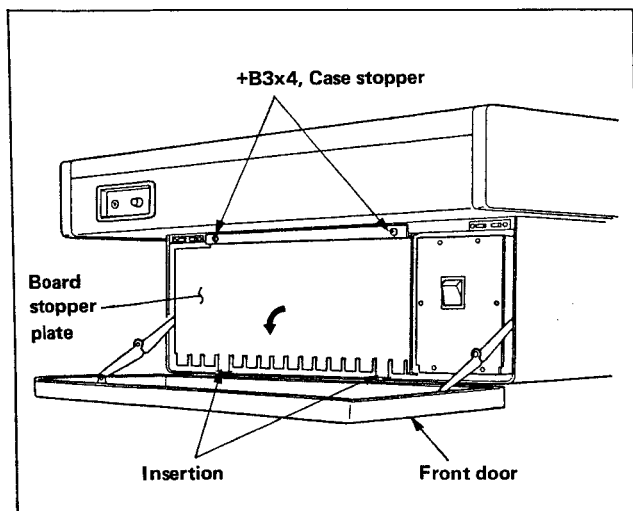
(For IF-153 board) Removal

- 1) Remove the top plate and then remove the lug of the ground lead that comes from the monitor rear panel.
- 2) Remove the four +PSW3x6 screws, and loosen the two +PSW4x8 screws fixing the monitor box.
- 3) Pull the bottom of the monitor rear panel and remove it.

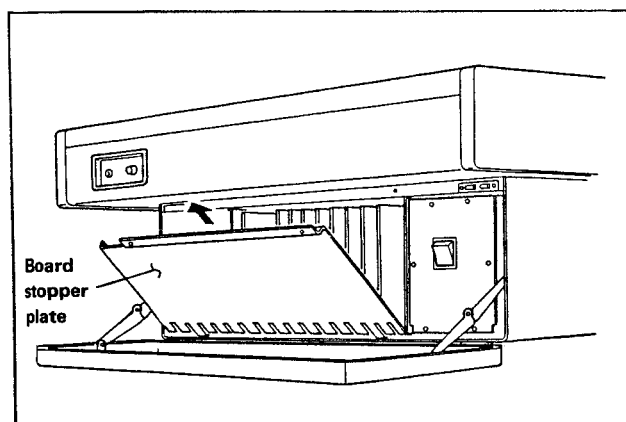


Monitor rear plate removal

1-2-7. Board Stopper Plate Removal

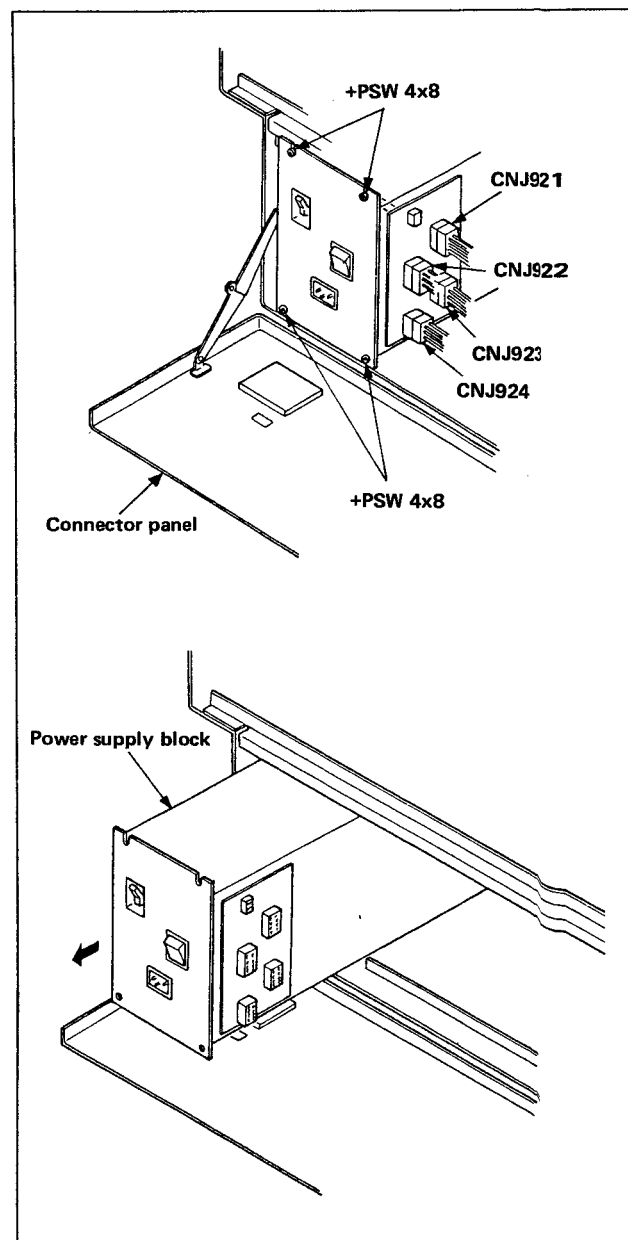


- 1) Open the front door and remove the two +B3x4 screws securing the board stopper plate.
- 2) Tilt the board stopper plate forward and pull it in the direction of the arrow.



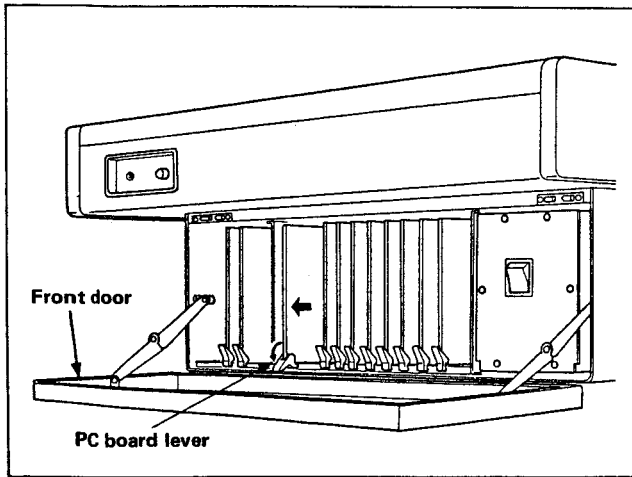
1-3. POWER SUPPLY BLOCK REMOVAL

- 1) Open the connector panel.
(See Section 1-2-5.)
- 2) Remove the connectors.
(CNJ921, 922, 923 and 924)
- 3) Remove the four +PSW4x8 screws.
- 4) Remove the power supply block.

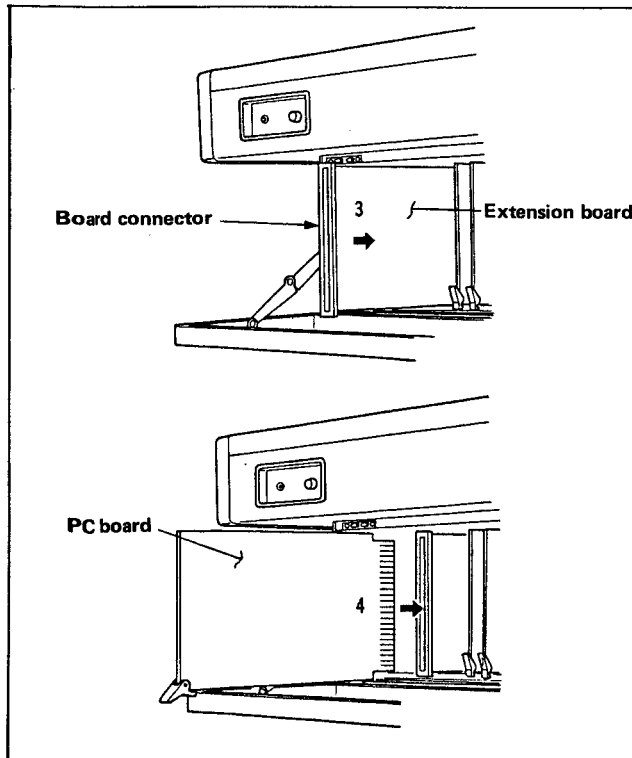


1-4. USAGE OF EXTENSION BOARD FOR CHECK AND ADJUSTMENTS

- 1) Open the front door and remove the board stopper plate. (See Section 1-2-7.)
- 2) Press the PC board lever down and pull the board forward.



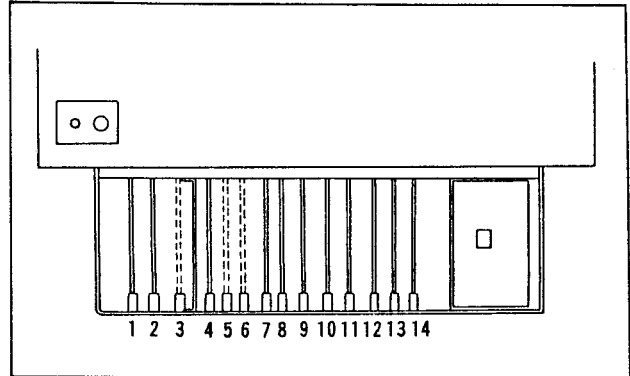
- 3) After removing the board, plug in the extension board.
- 4) Put the PC board on the extension board.



NOTE: When removing or installing the board, be sure to switch off the power.

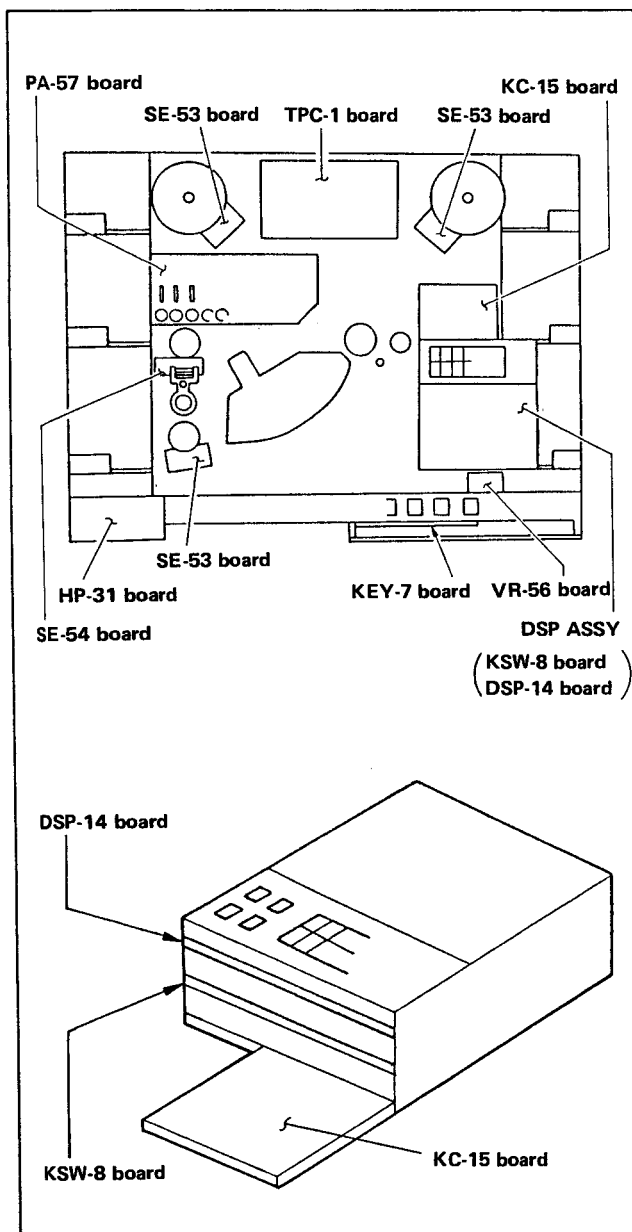
1-5. BOARDS LOCATION

1-5-1. Inside of the Card Rack

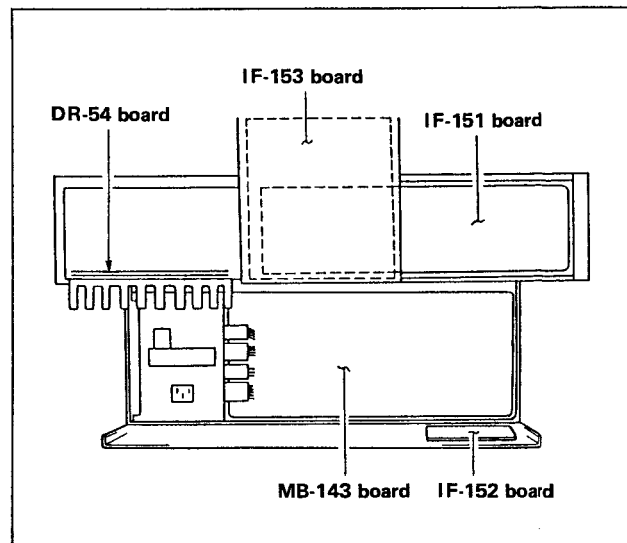


- 1 ARP BOARD
- 2 DAD BOARD
- 3 DAC BOARD (OPTION) DABK-3400
- 4 DIO BOARD
- 5 AUX1 BOARD (Reserved)
- 6 AUX2 BOARD (Reserved)
- 7 MCK BOARD
- 8 CTL BOARD
- 9 EDT1 BOARD
- 10 EDT2 BOARD
- 11 MDC BOARD
- 12 MDM BOARD
- 13 SEP BOARD
- 14 REC BOARD

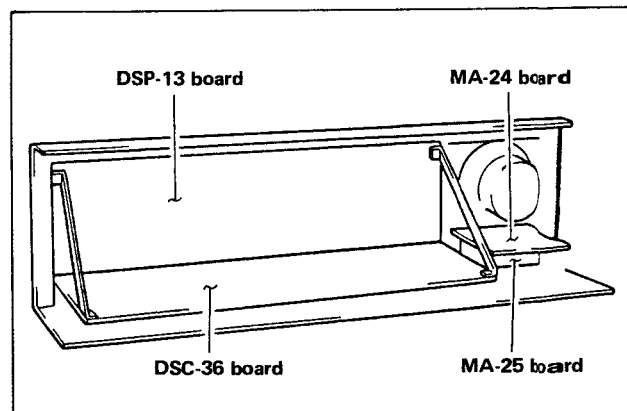
1-5-2. Top View



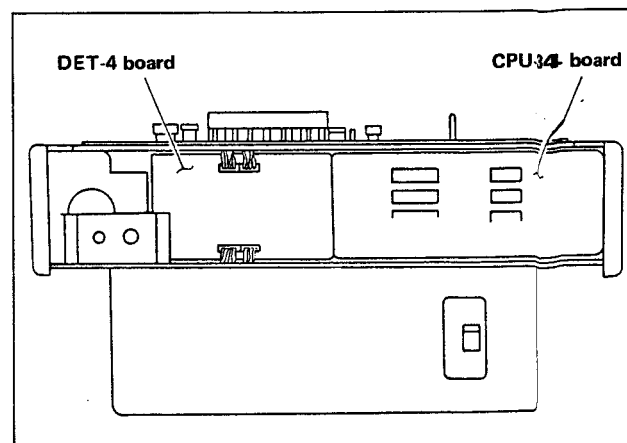
1-5-3. Rear View



1-5-4. Inside of Monitor Box



1-5-5. Front View



1-6. SERVICE TOOLS LIST

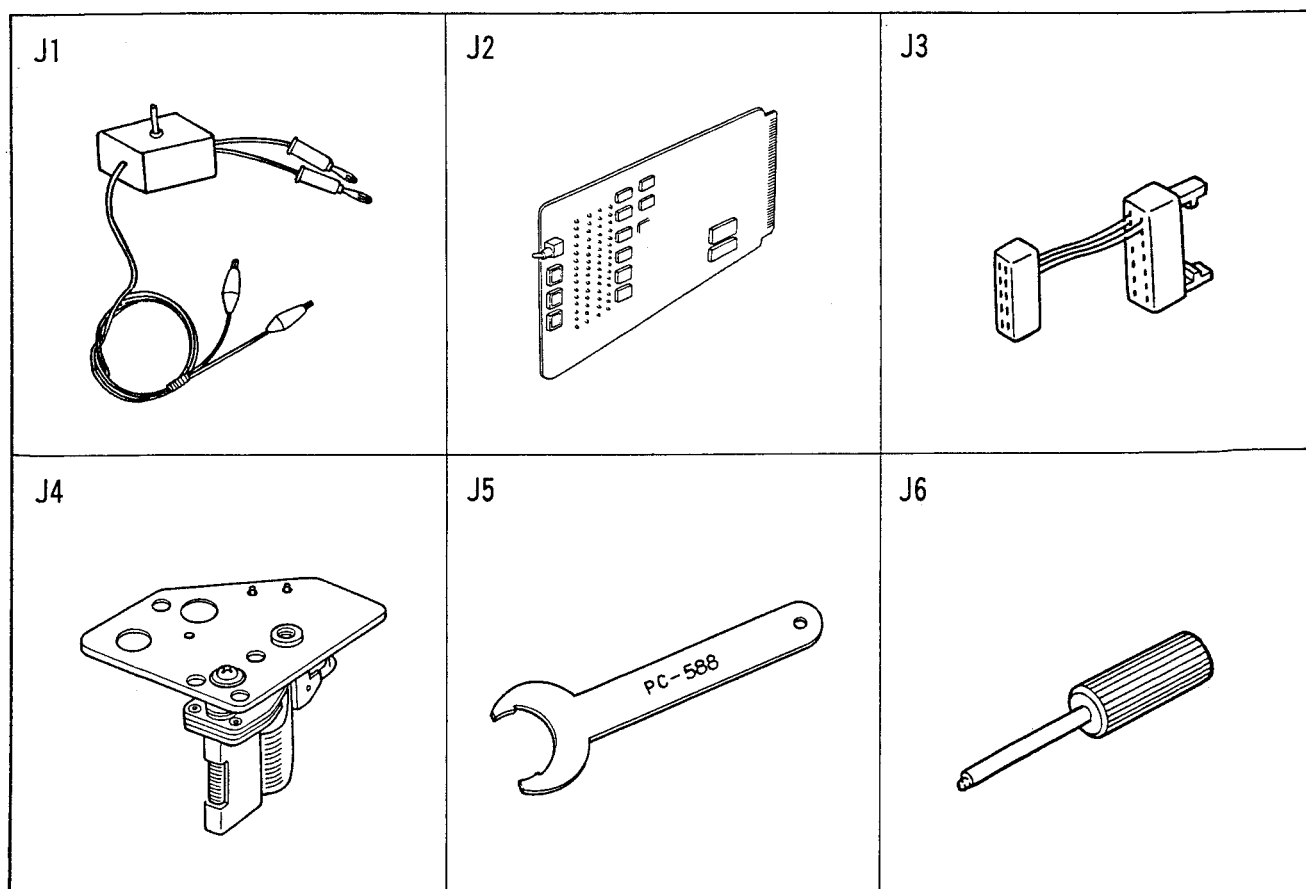
Ref. No.	Name	Part No.	Remarks
J1	REC current adjustment filter	J-6222-020-A	For REC current adjustment
J2	Test pattern generator jig	J-6106-000-A	For digital circuit check
J3	Analog extension cable	J-6101-260-A	For analog head adjustment
J4	Digital monitor head jig	J-6105-730-A	For SYNC REC head recording current adjustment
J5	Function key removing spanner (L)	J-6105-880-A	For installing and removing function keys
J6	Eccentric screwdriver	J-6105-900-A	For head spacing adjustment
J7	Function key removing spanner (S)	J-6105-920-A	For installing and removing function key switches
J8	Roller guide adjustment jig	J-6105-930-A	
J9	CRC error meter	J-6220-210-A	
-	PCM-3402 alignment tape AR3402-1	8-960-080-51	For adjusting the head azimuth, head height, head contact (digital only), AUX track level, digital track equalizer, error rate, servo gain, etc.
-	Standard blank tape for recording	8-873-001-88 8-873-005-24 8-873-002-91	C1D-1/4A (with data) C1C-DAQ (with data) C2D-DAQ (without data)
J10	Tentelometer	J-6041-680-A	For tape tension adjustment
J11	Torque screwdriver	J-6103-860-A	+4mm
J12	Precision screwdriver	7-721-051-10	Screwdriver set Blade size: 0.8mm (No.1), 1.4mm (No.2) 2.0mm (No.3), 2.4mm (No.4) 2.9mm (No.5), 3.8mm (No.6)
J13	L-shaped hexagonal wrench	7-700-736-00	Wrench set Socket size: 1.27mm, 1.4mm, 1.5mm, 1.58mm, 2.0mm, 2.5mm, 3.0mm, 4.0mm, 5.0mm, 6.0mm, 8.0mm, 10.0mm
		7-700-736-06	0.89mm

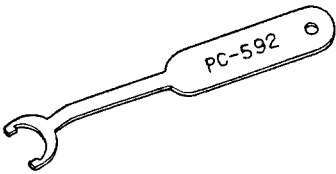
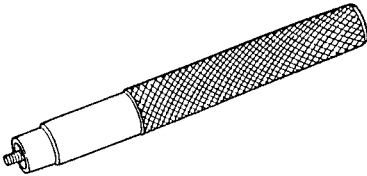
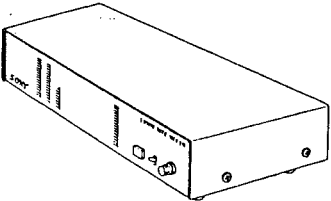
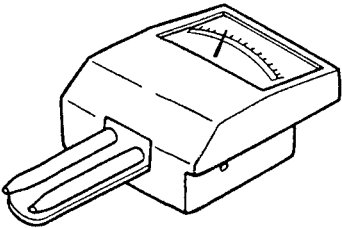
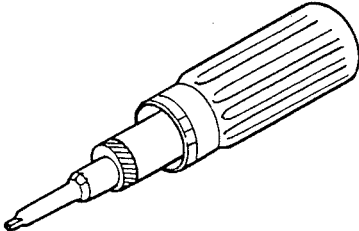
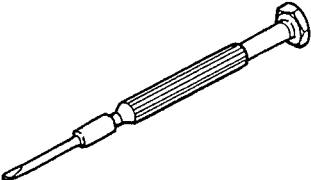
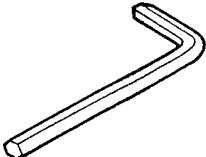
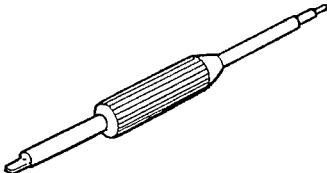
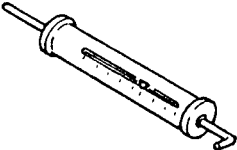
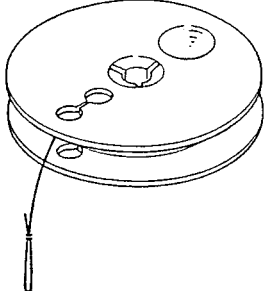
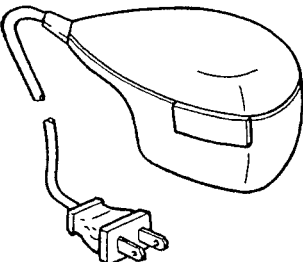
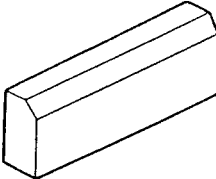
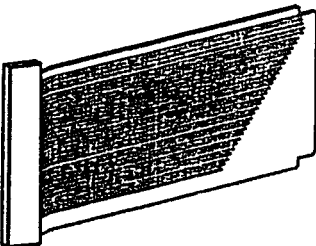
Figures corresponding to the above reference numbers are shown on the following page.

Ref. No.	Name	Part No.	Remarks
J14	Alignment tool	J-6026-240-A	For front-end adjustment
J15	Gauge 1kg Gauge 4kg	7-732-051-02 9-911-043-01	Tension gauge Tension gauge
J16	Torque measurement drum	9-911-041-01	
J17	Head eraser		MODEL QM 211 NORTRONICS INC. (USA)
J18	Head zenith block	J-6105-960-A	For head zenith adjustment
J19	Extension Board	J-6222-200-A	
-	Cleaning sheet (leather)	2-034-697-00	
-	SONY grease	7-662-010-04	SGL-505
-	Oil	7-661-018-18	Mitsubishi Diamond Oil Hydro fluid NT-68

⊙: Commercially available in certain areas.
(not available from the Sony Repair Parts Center.)
Figures corresponding to the above reference numbers are shown on the following page.

SERVICE TOOLS FIGURES



<p>J7</p> 	<p>J8</p> 	<p>J9</p> 
<p>J10</p> 	<p>J11</p> 	<p>J12</p> 
<p>J13</p> 	<p>J14</p> 	<p>J15</p> 
<p>J16</p> 	<p>J17</p> 	<p>J18</p> 
<p>J19</p> 		

SECTION 2

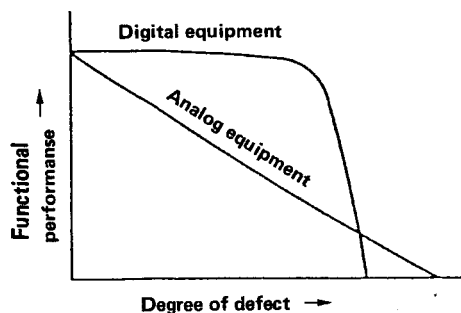
PERIODIC INSPECTION AND MAINTENANCE

2-1. PURPOSE OF PERIODIC INSPECTIONS

The purpose of the periodic inspections described in this section is to prevent malfunctions and breakdowns resulting from wear and material fatigue, which advance in proportion to frequency and accumulated time of use, in the PCM-3402's mechanical and drive systems.

In systems like the PCM-3402 that include digital processing systems, and especially those protected by error correction codes, minute defects in the system do not become readily apparent, and their detection is consequently often delayed (see the Figure below.) The periodic inspections recommended in this section are designed to eliminate this vulnerability in the PCM-3402 by aggressively discovering and repairing potential defects before they occur.

The basic purpose of performing these periodic inspections and maintenance procedures is to maintain the electrical and mechanical specifications listed in the PCM-3402's operation manual.



2-2. DAILY MAINTENANCE

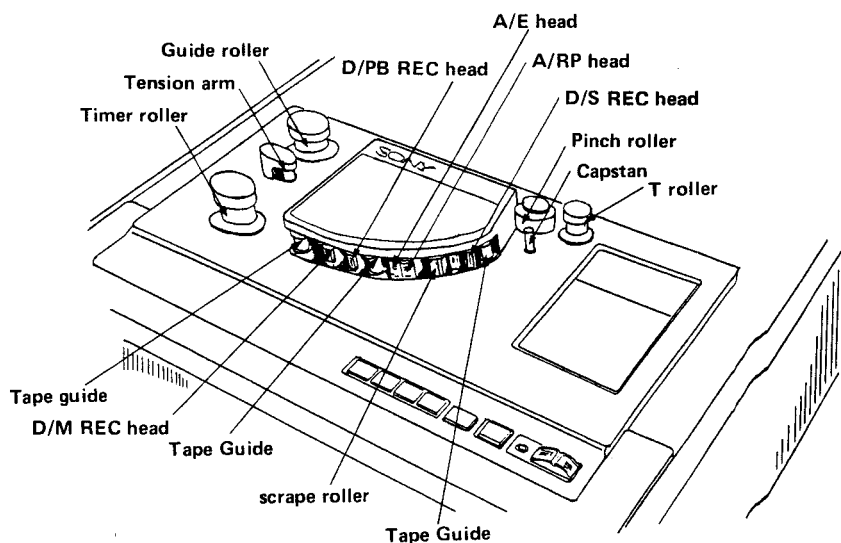
Clean and degauss the PCM-3402 every day to maintain its performance.

2-2-1. Cleaning

Clean the areas indicated with arrows in the figure below with a cleaning piece slightly dampened by ethyl alcohol.

- . If there is stubborn dirt on the tape guides in the guide roller and head block, clean with alcohol then wipe off with a clean dry cloth.
- . Wipe each of the heads in the direction that the tape travels in with a cotton swab dipped in alcohol, then wipe it lightly with a dry cotton swab.

Warning: The digital PB head is like the teeth of a comb, so be particularly careful with it. Never wipe it in the direction perpendicular to the direction that the tape travels in.



HEAD AND ROLLERS POSITION

- . Clean the tape shifter with a cotton swab dipped in alcohol.
- . After wiping the capstan and the pinch roller well with a cleaning piece damped by alcohol, wipe them with a soft, dry cloth.

Warning: When cleaning the rollers and guides, do not apply cleaning liquid directly to the roller or apply too much cleaning fluid to cloths or cotton swabs. Just let the cleaning fluid seep into the cleaning cloth or cotton swab.

Daily cleaning prevents the buildup of magnetic powder from the tapes.

2-2-2. Head Degaussing

Bring the degaussing surface of the degausser as close to the head as possible, then switch on the power of the degausser.

Slowly draw the degausser away from the head, then when it is a good distance away, switch off the power. Degauss all the heads and tape guides.

Warning: When degaussing, always switch off the power of the PCM-3402. Do not touch a head directly with the degausser.

2-3. METHODOLOGY OF PERIODIC INSPECTIONS AND MAINTENANCE PROCEDURES

In order to achieve the objectives stated in Section 2-1, the periodic inspections and maintenance procedures entail the following: replacing worn parts, cleaning components of the mechanical systems, lubricating, and conducting accompanying inspections and adjustments of the mechanical and electrical systems. These procedures are to be conducted at regular intervals according to the reading of the Timer (Hours meter) located on the DR-54 board of PCM-3402. The intervals for each inspection and maintenance procedure and part replacement are given in the table on the next page.

Note that the part-replacement intervals given in the table have been established on the basis of part life as estimated from actual performance. Sony therefore reserves the right to revise these intervals as it sees fit according to newly obtained part-life data.

PCM-3402 Periodic Inspection and Maintenance Schedule (Guidelines)

Conduct periodic inspections and maintenance procedures (including part replacement) according to the following schedule.

Inspection and maintenance work should be carried out first after 3,000H.

After the first 12,000H inspection and maintenance, repeat the schedule every 3,000 hours from the 3,000H inspection and maintenance program.

○ : Cleaning or lubrication ◇ : Check and adjustment ☆ : Part replacement H=hours

Inspection and maintenance item	Q'ty	3,000H	6,000H	9,000H	12,000H
1. Tape transport system					
1) Tape guide G1 tape-travel check		◇	◇	◇	◇
2) Tape guide G2 tape-travel check		◇	◇	◇	◇
3) Tape guide G3 Tape-travel check		◇	◇	◇	◇
4) Scrape filter (A-7810-295-A)	1	◇	☆	◇	☆
5) Shifter arm tape-travel check		◇	◇	◇	◇
Shifter arm (1) assy (X-4920-508-1)	1	○	○	☆	○
Shifter arm (2) assy (X-4920-509-1)	(each)				
2. Timer roller section					
1) Timer roller assy (X-4920-510-4)	1	◇	☆	◇	☆
2) Abnormal noise from rotating parts		◇	◇	◇	◇
3) Timer roller height		◇	◇	◇	◇
3. Guide roller section					
1) Guide roller (4-920-613-04)	1	◇	☆	◇	☆
2) Ball bearing (4-888-483-01)	2	◇	☆	◇	☆
3) T roller (4-920-522-03)	1		☆		☆
4) Abnormal noise from rotating parts		◇	◇	◇	◇
5) Tape travel		◇	◇	◇	◇
4. Tension arm section					
1) Tension arm assy	1	◇	◇	☆	◇
5. Pinch roller section					
*1) Pinch roller puck assy (X-3711-508-1)	1	☆	☆	☆	☆
2) Pinch pressure		◇	◇	◇	◇
6. Reel table section					
1) Reel motor replacement	2	☆	☆	☆	☆
2) Brake band assy	2	◇	◇	☆	◇
3) Brake mechanism		◇	◇	◇	◇
4) Brake torque		◇	◇	◇	◇
5) Reel table height		◇	◇	◇	◇
6) Abnormal noise from rotating parts		◇	◇	◇	◇

*Replace every 3,000 hours or once a year.

Inspection and maintenance item	Q'ty	3,000H	6,000H	9,000H	12,000H
10. Electrical system 1) Secondary side voltage check 2) Analog, TC system 3) Electromagnetic conversion system (REC CURRENT REC CURRENT OFFSET PB EQUALIZER		◇ ◇ ◇	◇ ◇ ◇	◇ ◇ ◇	◇ ◇ ◇
11. Electrical characteristics 1) Level 2) Frequency response 3) Distortion 4) S/N		◇ ◇ ◇ ◇	◇ ◇ ◇ ◇	◇ ◇ ◇ ◇	◇ ◇ ◇ ◇
12. Function check		◇	◇	◇	◇

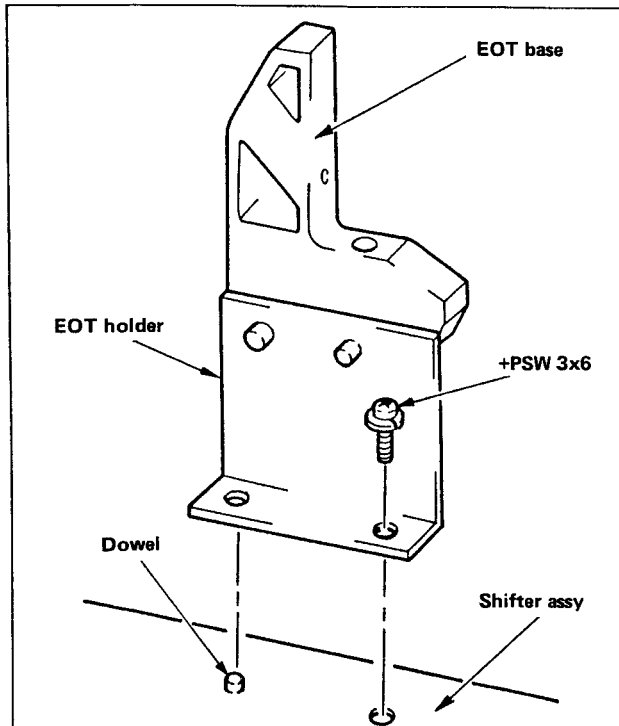
SECTION 3

MECHANICAL ADJUSTMENTS AND REPLACEMENT

3-1. ADJUSTING THE TAPE SHUTOFF AND SHUTTLE MECHANISM

3-1-1. Adjusting the Position of the Photo-interrupter

Line up the dowel on the shifter assembly with the slot on the EOT holder and use a +PSW3x6 screw to install the sensor as far to the back as it will go. Since this sensor combines the light emitter diode and the photo-receiver in a single unit, there is no need to adjust the light shaft. Install the sensor pushed all the way to the back so that the sensor does not touch the tape.



3-1-2. Replacing the Shuttle Control and Adjusting Its Position

Measuring equipment: Voltmeter
Multimeter

Tools: 1.5mm hex wrench
4mm Phillips screwdriver

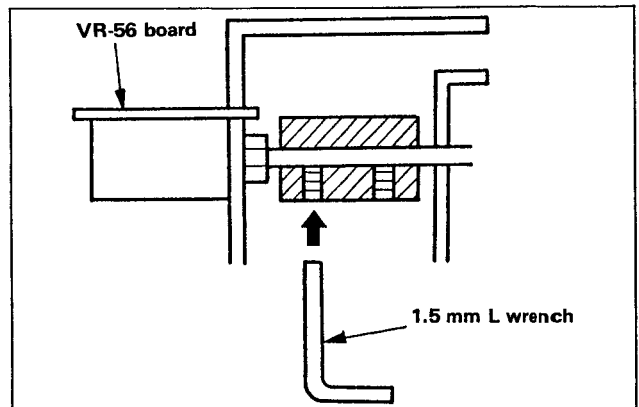
Replacement procedure

1. Remove the front plate and pad.
(See Section 1-2-2.)
2. Remove the top plate and the ornamental panel. (See Section 1-2-1.)

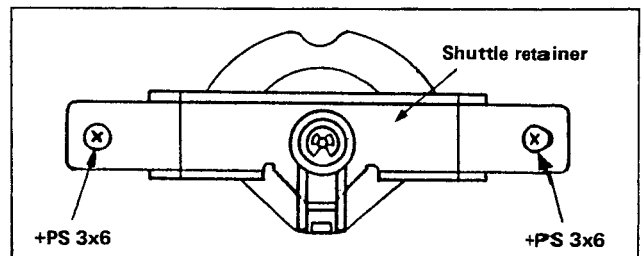
3. Remove the CPU-34 board.

Remove the CN429 connector on the KEY-7 board.

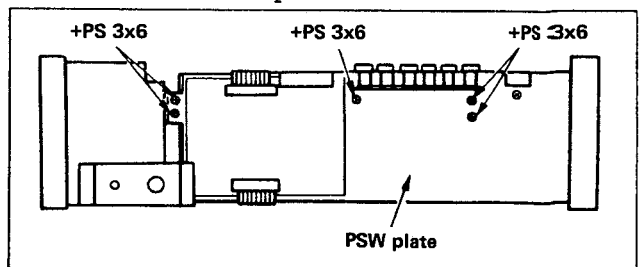
4. Insert the 1.5mm hexagonal wrench as shown below and loosen the fastening screw.



5. Loosen the two screws indicated in the figure below, pull the shuttle retainer forward, and remove it.

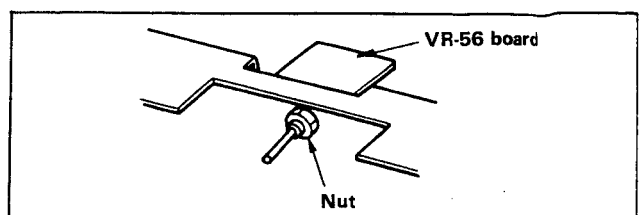


6. Remove the five +PS3x6 screws, and then remove the PSW plate.



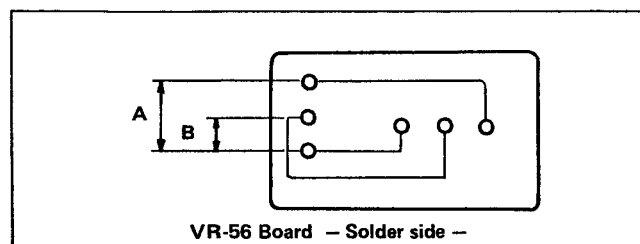
7. Remove the connector that is connected to the VR-56 board.

8. Loosen the nut indicated in the figure below and remove the VR-56 board backward.



9. Install the new VR-56 board in the FSW plate assembly.
10. Use the multimeter to measure Resistance A indicated in the figure below, then adjust the variable resistor so that Resistance B shown in the figure below is half the value of Resistance A.

Specification: $B = \frac{A}{2} \pm 10\text{ohms}$



11. Install the shuttle retainer and the shuttle dial by reversing the procedure given in Step 5.
12. With the screw loosened in Step 4 tightened down, measure Resistance B and make sure that it is still the value measured in Step 9
13. If Resistance B has changed, loosen the fastening screw, turn the shuttle dial in the direction indicated by the table that follows to restore the correct value of Resistance B, then tighten the screw down again. Measure Resistance B again to make sure it has retained the correct value even after the screw is tightened down.

Multimeter resistance reading	Too low	Too high
Direction to turn the shuttle dial	Right	Left

14. Plug connector CN432 into the VR-56 board.
15. Plug connector CN429 into the KEY-7 board and install the CPU-34 board.

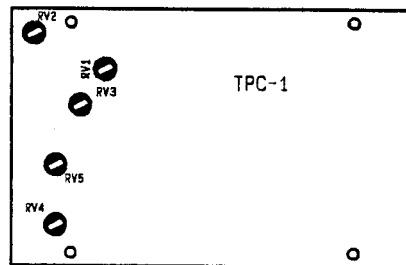
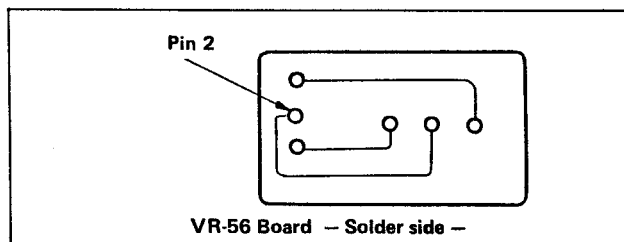
Shuttle midpoint voltage adjustment

Procedure:

1. Switch on the power.
2. Measure the voltage between Pin 2 in the figure below and the chassis ground.

Specification: $0 \pm 20\text{mV}$

Adjustment: RV2 on the TPC-1 board

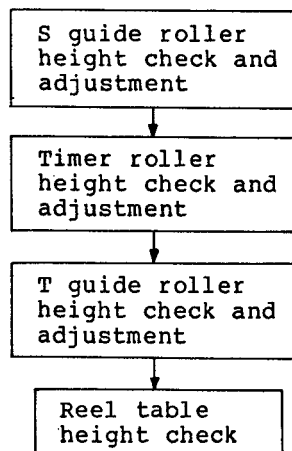


TPC-1 board

3-2. TAPE PATH SYSTEM CHECK AND ADJUSTMENT

3-2-1. Flow of Check and Adjustment Operations

When replacing or adjusting components of the tape path system (HBU, timer roller, tension arm, guide roller, etc.), check and adjust the tape path system according to the procedure given below. When carrying out one of the adjustments in the flow chart below, check all the subsequent items in the procedure and make only those adjustments you find to be necessary.



3-2-2. S Guide Roller Height Check and Adjustment

Tool: 1.5mm hexagonal wrench

S guide roller height check

1. Thread a blank tape and set the unit in the SLOW REWIND mode.
2. Check that the tape is wound up on the center of reel without rubbing the flange at all.

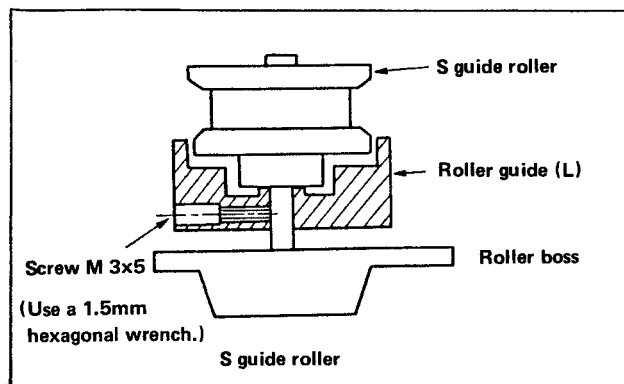
S guide roller height adjustment

Tool: Roller guide adjustment jig (J-6105-930-A)

1. Remove the cap of the S guide roller and install the roller height adjustment jig. In this case, do not tighten the jig any farther than it can be installed easily.
2. Loosen the two screws securing the roller guide.
3. Thread a blank tape and set the unit in the SLOW REWIND mode.
4. Turn the adjustment jig clockwise or counterclockwise so that the tape is wound up on the center of reel without rubbing the flange at all.

Jig turn direction	Guide roller
Clockwise	Down
Counterclockwise	Up

5. Tighten the screws for the guide roller, then check the height again.
6. Remove the adjustment jig and install the cap on the guide roller.

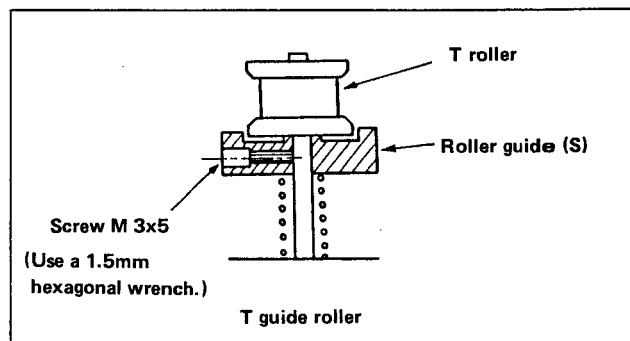


3-2-3. T Guide Roller Height Check and Adjustment

Tool: 1.5mm hexagonal wrench

T guide roller height check

1. Thread a blank tape and play it.
2. Check that the tape is passing through the center of the roller flange.
3. Make sure that the tape is not curling.
4. Make sure that there is clearance between the tape and the reel flanges and the tape is wound up smoothly on the center of the reel.



T guide roller height adjustment

Tool: Roller guide adjustment jig (J-6105-930-A)

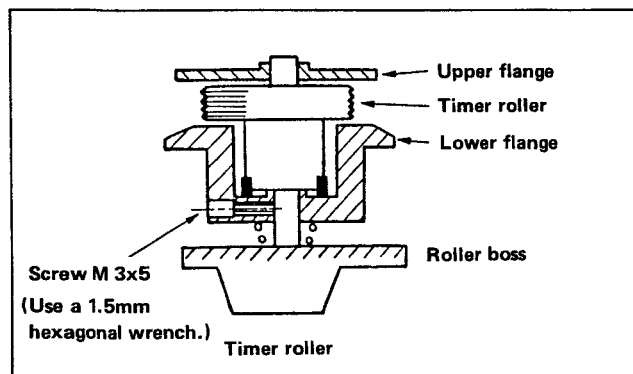
1. Remove the cap of the T guide roller and install the roller height adjustment jig. In this case, do not tighten the jig any farther than it can be installed easily.
2. Loosen the screw securing the roller guide.
3. Thread a blank tape and play it.
4. Turn the adjustment jig clockwise or counterclockwise so that the tape runs on the center of the T guide roller reel without rubbing the flange at all.

Jig turn direction	Guide roller
Clockwise	Down
Counterclockwise	Up

5. Tighten the screw for the roller guide, then check the height again.
6. Remove the adjustment jig and install the cap on the guide roller.

3-2-4. Timer Roller Height Check and Adjustment

Tool: 1.5mm hexagonal wrench



Preliminaries

Always check the height of the timer roller after replacing each head assy or the entire HBU. Always adjust the height of the new timer roller after replacing the timer roller.

Timer roller height check

Mount a tape and play it. Check that there is no gap or curling where the tape meets the upper roller flange and that the tape does not curl about the lower flange of the G1 tape guide on the HBU. If this is the case, there is no need to adjust the height of the timer roller.

Timer roller height adjustment

Tool: Roller guide adjustment jig (J-6105-930-A)

1. Remove the top plate and the ornamental panel.
2. Remove the cap of the timer roller.
3. Install the roller height adjustment jig in place of the cap. In this case, do not tighten the jig any farther than it can be installed easily.
4. Loosen the two screws securing the lower flange.

5. Thread a blank tape and play it, and turn the adjustment jig clockwise or counterclockwise to the point at which the tape and the top flange of the roller just begin to contact each other.

Jig turn direction	Timer roller
Counterclockwise	Up
Clockwise	Down

6. Turn the jig 45 degrees clockwise from the point in step 5 to lower the roller.
7. Once the adjustment is over, tighten the screws for the lower flange.
8. Remove the adjustment jig and install the cap on the timer roller.

3-2-5. Reel Table Height Adjustment

1. Thread a blank tape and set the unit in the SLOW FF mode.
 2. Check that the tape is wound up without rubbing the flange of the S-side reel.
 3. Set the unit in the SLOW REWIND mode.
 4. Check that the tape is wound up without rubbing the flange of the T-side reel.
- The height of the reel base is not adjusted. If the check below shows that the tape is rubbing against the reel flange, adjust the following adjustments.

3-2-2. S Guide Roller Height Adjustment

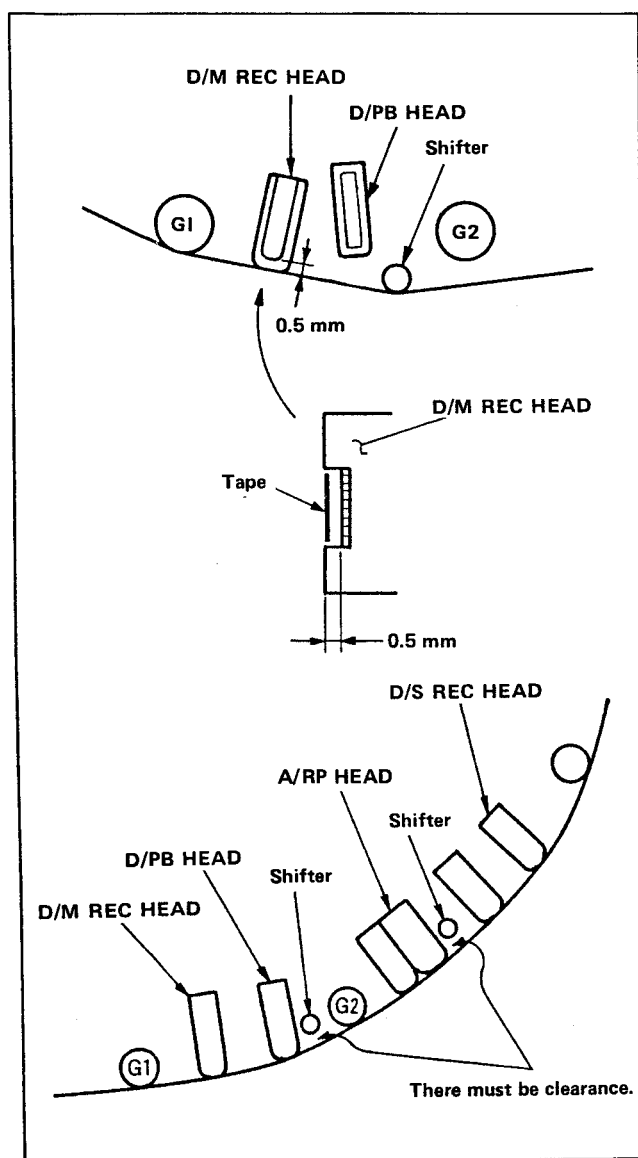
3-2-3. T Guide Roller Height Adjustment

3-2-4. Timer Roller Height Adjustment

3-2-6. Tape Shifter Position Check and Adjustment

Tape shifter Position check

1. Thread a blank tape and set the unit in the FF or REW mode.
2. Make sure that the tape is 0.5mm apart from the D/M REC head. (See the figure below.)
3. Set the unit in the STOP mode.

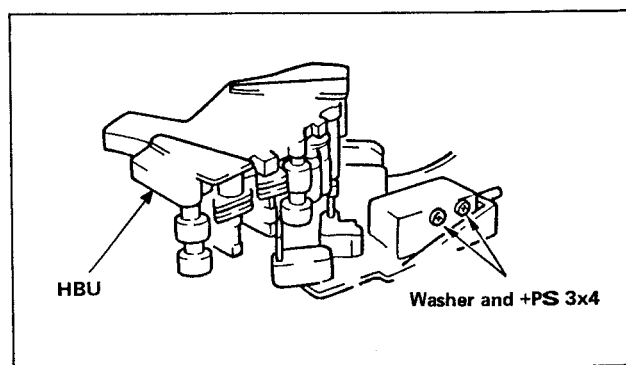


4. Check that there is clearance between the tape and the shifter, as shown in the figure above.

Tape Shifter position adjustment

The clearance between the tape and head during the FF mode is adjusted by adjusting the position of the shifter plunger.

1. Loosen the two +PS3x4 screws and washers holding the plunger shown in the figure below.



2. Thread a blank tape and set the unit in the SLOW WIND mode.
3. Move the plunger to the left or right to a position at which the clearance between the D/M REC head and tape is 0.5mm, then tighten the screw.

Direction the plunger is moved	Clearance between the tape and the D/M REC head
←	Widens
→	Narrows

3-2-7. Final Check of the Tape Path System

After checking that the screws holding the S guide roller, timer roller, T guide roller, and the shifter plunger are tightened, thread a tape and play it. Check that the tape is not curling at HBU G1, G2 and G3 and that there is no sound from tape rubbing against the roller flanges. Then, set the unit in the REW mode and check that there is a clearance between the tape and each roller plus reel flanges.

3-3. TAPE SHIFTER MECHANISM REPLACEMENT AND ADJUSTMENT

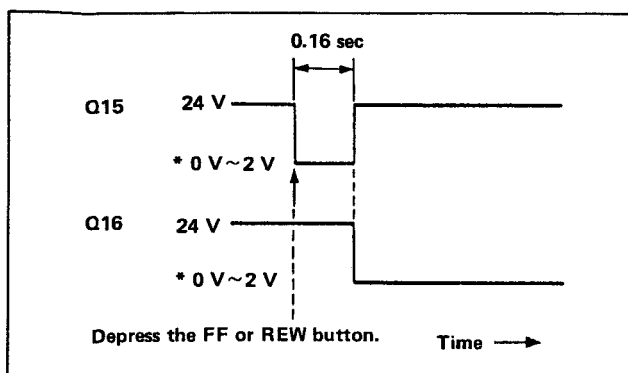
3-3-1. Checking Performance

- (1) Check that none of the ceramic part of the shifter has worn away where the tape passes over it. (checked by the eye.)
- (2) Make sure that when a tape is threaded, the shifter does not touch it.
- (3) There must be clearance between the tape and the D/M REC head when the shifter is activated during FF, REW or SLOW WIND mode. (See Section 3-2-6 "Tape shifter position check and adjustment.")
- (4) The shifter must return to its original position when the tape is taken up by FF or REW mode.

3-3-2. Plunger Solenoid Replacement and Adjustment

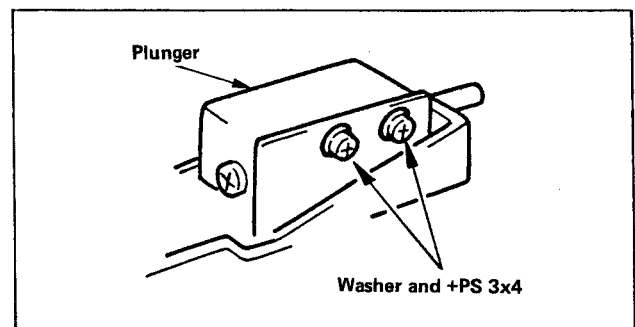
(1) Replacement period

1. When the period listed in the Periodic Inspection and Maintenance Schedule given in Section 2 is up.
2. If the plunger solenoid no longer satisfies the performance indicated in 3-3-1. At this time, the voltage at the collector pins of transistors Q15 and Q16 on the TPC-1 board must be as shown in the figure below. (See the Value indicated by * in the figure.)
If these voltages are not like the following, repair the TPC-1 board.

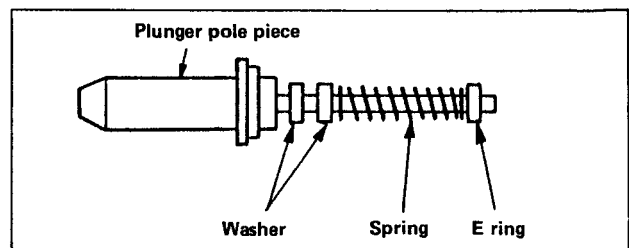


(2) Replacement method

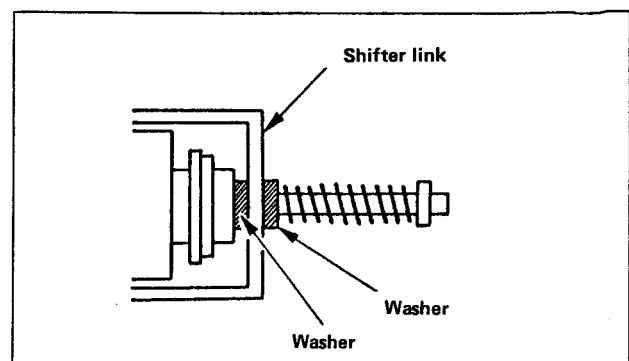
1. Pull out the CN409 connector on the TPC-1 board, then cut the cable tie so that the plunger harness can be removed.
2. Remove the two +PS3x4 screws and washers shown in the figure below, then lift up the plunger, remove the limiter spring and the shifter link, then remove the plunger.
Next pull out the harness.



3. Remove the E ring from the top of the plunger pole and remove the two washers and the spring.
4. Place the two washers and the spring on the pole of the replaced plunger and secure them with the E ring.



5. Install the plunger by reversing the procedure given in Step 2. Sandwich the shifter link between the two washers as shown in the figure below.

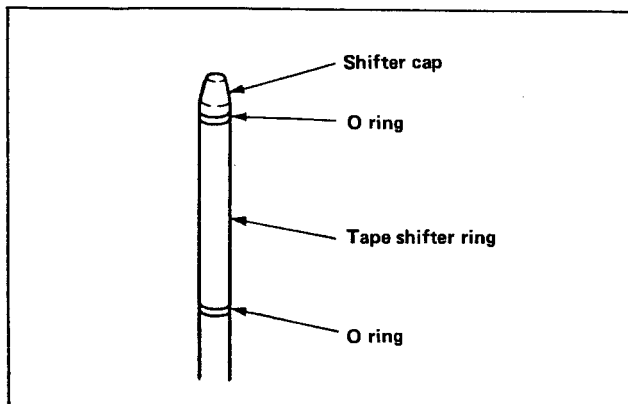


3-3-3. Tape Shifter Replacement

(1) Replacement period

Since the shifters used in the PCM-3402 are ceramic, they wear out quite slowly. If they wear out to the point that it is visible to the eye, either rotate the ceramic part of the shifter so that a different part of it touches the tape or replace the tape shifter entirely.

(2) How to rotate the section that touches the tape



1. Turn the shifter cap clockwise to loosen it.
2. Turn the shifter ring about 90 degrees so that a part of the ring that is not worn touches the tape.
3. Turn the shifter cap counterclockwise to tighten it.
4. Apply screw locking solution to the head of the cap.

(3) Replacing the tape shifter

1. Turn the shifter cap clockwise, then remove it.
2. Remove the O ring and shifter ring by pulling them up.
3. Insert the new O ring and shifter ring, then tighten down the shifter cap.
4. Apply screw locking solution to the head of the cap

3-3-4. Tape Fast-forward Check and Adjustment

Carry out the final check of the tape path system as explained in Section 3-2-7.

3-4. TIMER ROLLER REPLACEMENT AND ADJUSTMENT

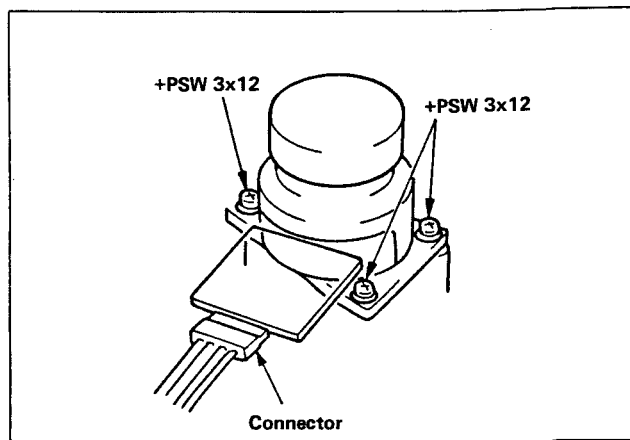
3-4-1. Timer Roller Assembly Replacement and Adjustment

(1) Replacement period

Replace the timer roller assembly after the period listed in the Periodic Inspection and Maintenance Schedule given in Section 2.

(2) Replacement method

1. Remove the connector from the SE-53 board.
2. Remove the three +PSW3x12 screws securing the timer roller assembly.
3. Check that the roller and flange of the replacement timer roller are not damaged. Turn the replacement timer roller by hand and make sure it does not make any abnormal sounds.
4. Install the replacement timer roller assembly with the three +PSW3x12 screws.
5. Plug in the connector.
6. Clean the roller.



(3) Adjustment

Adjust the height of the timer roller as explained in Section 3-2-4.

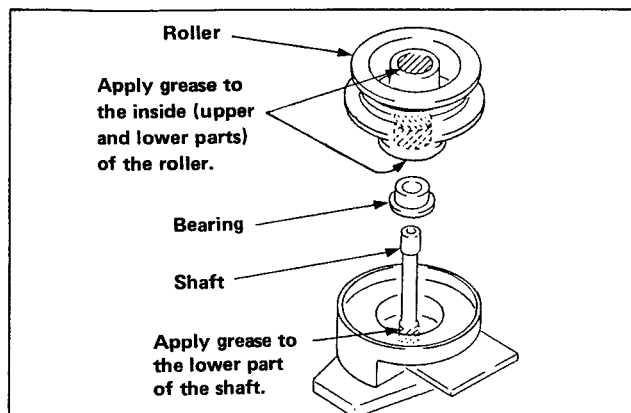
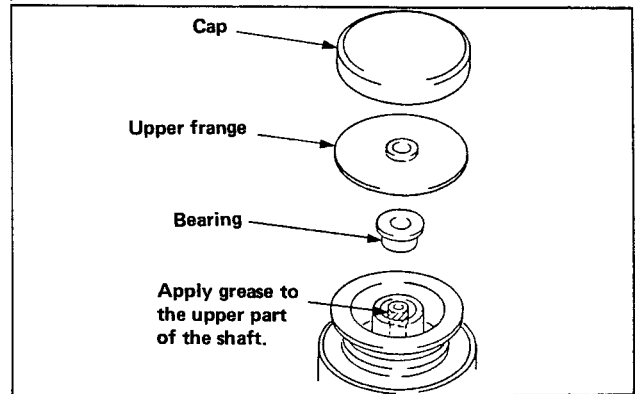
3-4-2. Replacing the Timer Roller Bearing

(1) Replacement period

- Replace the timer roller bearing after the period listed in the Periodic Inspection and Maintenance Schedule given in Section 2.
- Replace the timer roller bearing if there are strange noises when the timer roller turns.

(2) Replacement method

1. Turn the roller cap assembly counter-clockwise and remove it.
2. Remove the upper flange, roller and bearing by lifting them up.
3. Apply Sony Grease SGL505 to the lower part of the shaft indicated with diagonal lines in the figure and insert the bearing.
4. Apply Sony Grease SGL505 to the upper and lower parts of the inside of the roller indicated with diagonal lines in the figure and insert the roller.
5. Apply Sony Grease SGL505 to the upper part of the shaft and insert the replacement bearing.
6. Mount the upper flange, then turn the roller cap assembly clockwise to install it.



(3) Adjustment method

Adjust the height of the timer roller as explained in Section 3-2-4.

3-5. TENSION ARM REPLACEMENT AND ADJUSTMENT

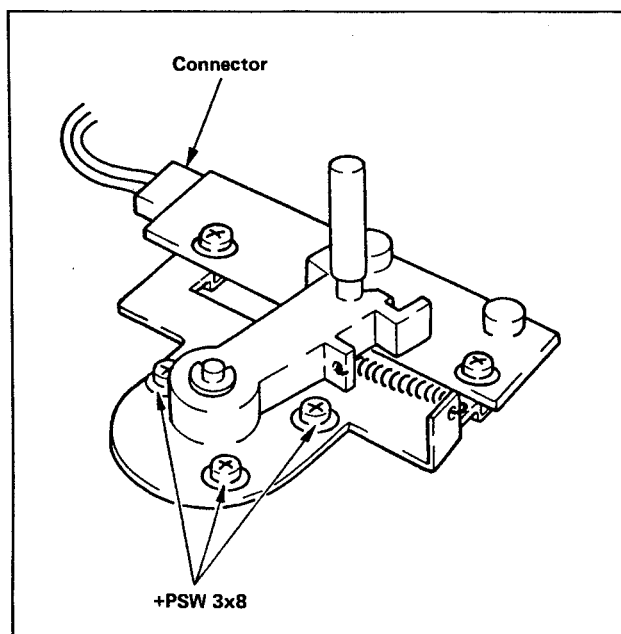
3-5-1. Tension Arm Assembly Replacement

(1) Replacement period

Replace the tension arm assembly after the period listed in the Periodic Inspection and Maintenance Schedule given in Section 2.

(2) Replacement method

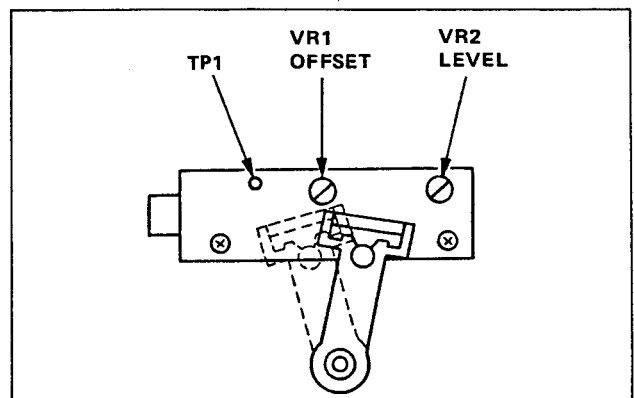
1. Remove the connector from the SE-54 board.
2. Remove the three +PSW3x8 screws securing the tension arm assembly and remove the tension arm assembly.



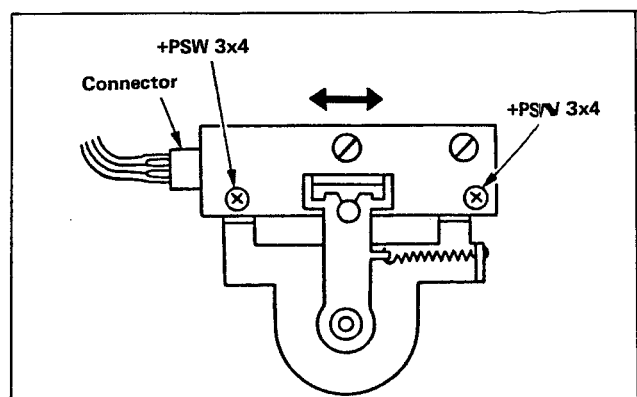
3. Check that there are no scratches or cracks in the ceramic section of the tension arm. Also, move the arm to the left and right by hand and make sure that it moves smoothly.
4. Install the replacement tension arm assembly with the three +PSW3x8 screws.
5. Clean the ceramic part of the tension arm.

3-5-2. Tension Arm Adjustment

1. Connect the oscilloscope between ground (the frame will do) and TP1 on the SE-54 board.
2. Move the tension arm to the left and right and adjust the level with VR2 and the offset with VR1 so that the voltage ranges from -3V to +3V.



3. Disconnect the connector, mount a tape, press the PLAY button to put the system in play mode, then press the STOP button.
4. Adjust the tension as explained in 3-5-3.
5. Plug in the connector, then loosen the two +PSW3x4 screws holding the SE-54 board in place. Slide the SE-54 board to the left and right to the point where the voltage at TP1 reads 0V on the oscilloscope, then retighten the screws.

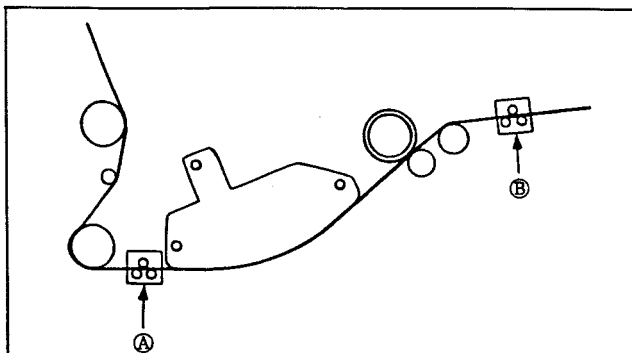


6. Repeat the cycle of playing the tape then stopping it two or three times and make sure that the voltage at TP1 is within 0.2V of 0V.
7. Perform steps 2 through 5 several times.

3-5-3. Tension Check and Adjustment

Check

1. Disconnect the connector from the SE-54 board.
2. mount a blank tape and play it.
3. Insert the tentelometer at Point (A) in the figure below and make sure that the tension is $90g \pm 20g$. Insert the tension meter at Point (B) in the figure below and make sure that the tension is $105g \pm 20g$.

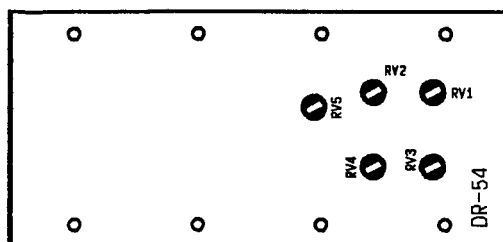


4. Plug in the connector to the SE-54 board, play the tape, and double check the tension at Points (A) and (B).

Adjustment

1. Disconnect the connector from the SE-54 board.
2. Mount a blank tape and play it.
3. Insert the tentelometer at Point (A) in the figure above and adjust VR1 on the DR-54 board so that the tension is $90g \pm 20g$. Insert the tentelometer at Point (B) in the figure above and adjust VR2 on the DR-54 board so that the tension is $105g \pm 20g$.

Measurement point	Tension	DR-54 board
(A)	$90g \pm 20g$	VR1
(B)	$105g \pm 20g$	VR2



DR-54 board

3-6. GUIDE ROLLER REPLACEMENT AND ADJUSTMENT

3-6-1. Replacing the S Guide Roller Assembly

(1) Replacement period

Replace the S guide roller assembly after the period listed in the Periodic Inspection and Maintenance Schedule given in Section 2.

(2) Replacing the S guide roller assembly

1. Remove the three +PSW3x10 screws securing the S guide roller assembly.
2. Check that the roller and flange of the replacement guide roller are not damaged. Turn the replacement roller by hand and make sure it does not make any abnormal noises.
3. Mount the replacement guide roller assembly on the chassis and install it with the three +PSW3x10 screws.
4. Clean the roller

(3) Adjustment method

How to adjust the S guide roller

Adjust the S guide roller height as explained in 3-2-2 and adjust the reel table height as explained in 3-2-5.

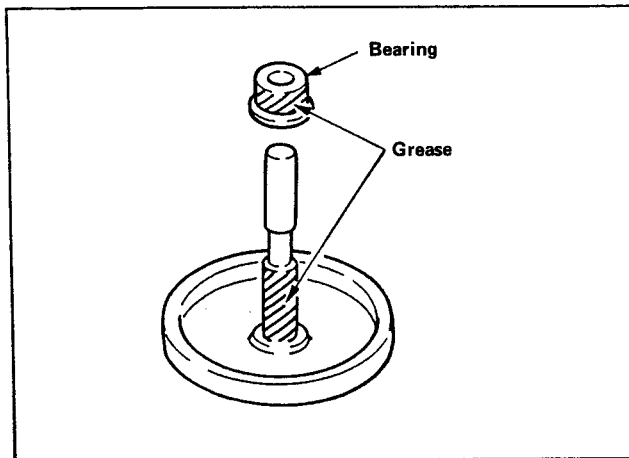
3-6-2. Replacing the T Guide Roller

(1) Replacement period

Replace the T guide roller after the period listed in the Periodic Inspection and Maintenance Schedule given in Section 2.

(2) Replacing the T guide roller

1. Remove the T guide roller cap.
2. Remove the roller and the bearing.
3. Apply Sony Grease SGL505 to the part of the shaft and the replacement roller indicated with diagonal lines in the figure below and insert the bearing.



4. Insert the replacement roller.
5. Apply Sony Grease SGL505 to the part of the shaft and the roller indicated with diagonal lines in the figure and insert the bearing.
6. Mount the cap

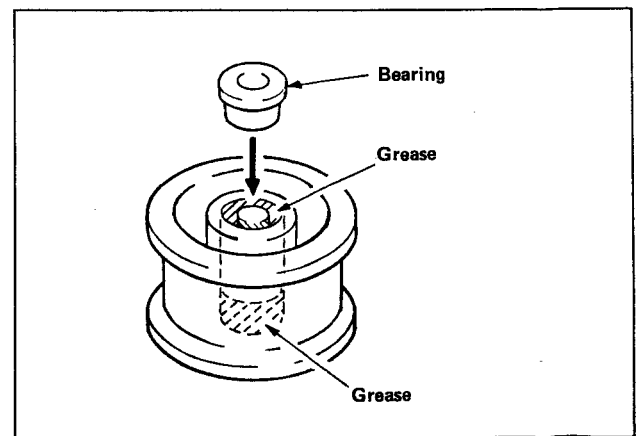
3-6-3. Replacing the Guide Roller Bearing

(1) Replacement period

Replace the guide roller bearing after the period listed in the Periodic Inspection and Maintenance Schedule given in Section 2.

(2) Replacement method

1. Turn the guide roller cap by hand and remove it, then remove the guide roller and bearing.
2. Apply Sony Grease SGL505 to the part of the shaft and the replacement bearing indicated with diagonal lines in the figure below and insert the bearing.
3. Insert the roller.
4. Apply Sony Grease SGL505 to the part of the shaft and the roller indicated with diagonal lines in the figure below and insert the replacement bearing.



5. Mount the cap by screwing it on by hand.
6. Turn the roller by hand and make sure it does not make any abnormal noises.
7. Clean the roller

(3) Adjustment method

Check the heights of the S and T guide rollers and adjust them, if necessary. (See section 3-2-2 and 3-2-3.)

3-7. REEL MOTOR REPLACEMENT AND ADJUSTMENT

Tool: 1.5mm hexagonal wrench

3-7-1. Reel Motor Replacement

(1) Replacement period

- . Replace the reel motor after the period listed in the periodic Inspection and Maintenance Schedule given in Section 2.
- . Replace the reel motor if it makes strange noises when it turns.

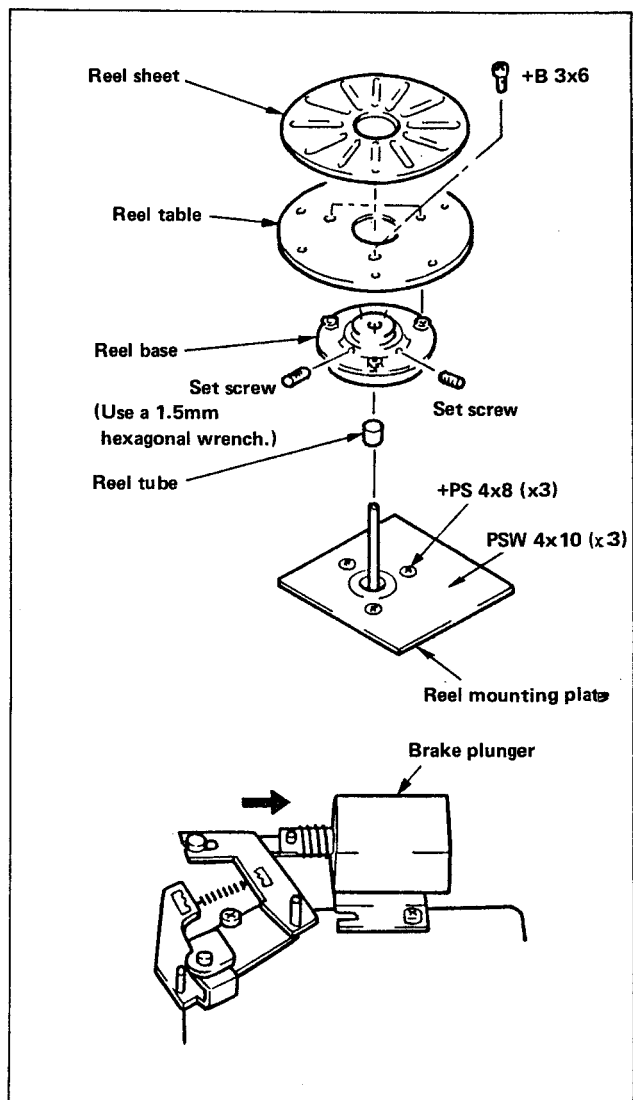
(2) Preparations for replacing the reel motor

1. Remove the top plate.
2. Open the heat sink on the DR-54 board.

(3) Replacement method

1. Disconnect the CN462 (S side) and CN463 (T side) connectors from the DR-54 board.
2. Peel off the reel sheet from the reel table. (The only thing holding the reel sheet to the reel table is the protrusion on the reel sheet.)
3. Remove the three +B3x6 screws shown in the figure on the right, then remove the reel table.
4. Loosen the screws securing the reel base, then pull the reel base up and away, holding the brake plunger in the direction indicated by arrow in the figure on the right and with the brake off.
5. While holding the reel motor from below so that it does not fall, loosen the three +PS4x8 screws securing the reel motor, then remove these screws. (See the figure on the right.)
6. While pulling the bottom of the reel motor to the front of the machine, pull the reel motor to the bottom of the chassis and remove it from the side of the chassis. (If it is too difficult to remove the reel motor this way, it is also possible to remove the three +PSW4x10 screws and pull the reel mounting plate upwards.

7. Turn the shaft of the replacement reel motor by hand to check that it moves smoothly without any strange noise.
8. Install the replacement reel motor by reversing the procedure with which the old reel motor was removed. Install the reel tube and the reel base.
9. Check the brake torque as explained in Section 3-8.
10. Install the reel table and reel sheet.
11. Plug in the CN462 (S side) and CN463 (T side) connectors into the DR-54 board.
12. Adjust the tension as explained in 3-5-3.



3-7-2. Brake Band Replacement

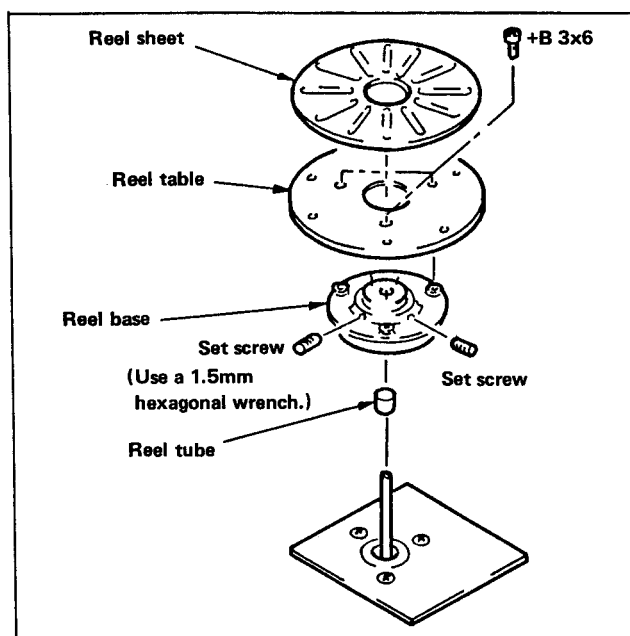
Tool: 1.5mm hexagonal wrench

(1) Replacement period

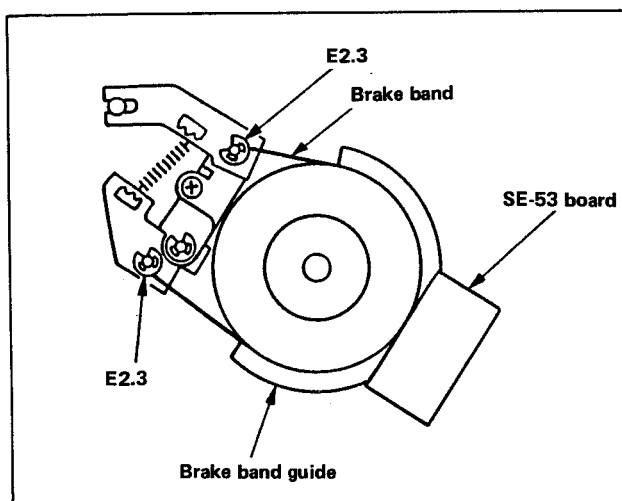
- Replace the brake band after the period listed in the Periodic Inspection and Maintenance Schedule given in Section 2.
- Replace the brake band if the brake makes a strange noise.

(2) Replacement method

1. Remove the reel sheet, the reel table, and the reel base as shown in the figure below.



2. Remove the two E2.3 rings. (See the figure below.)

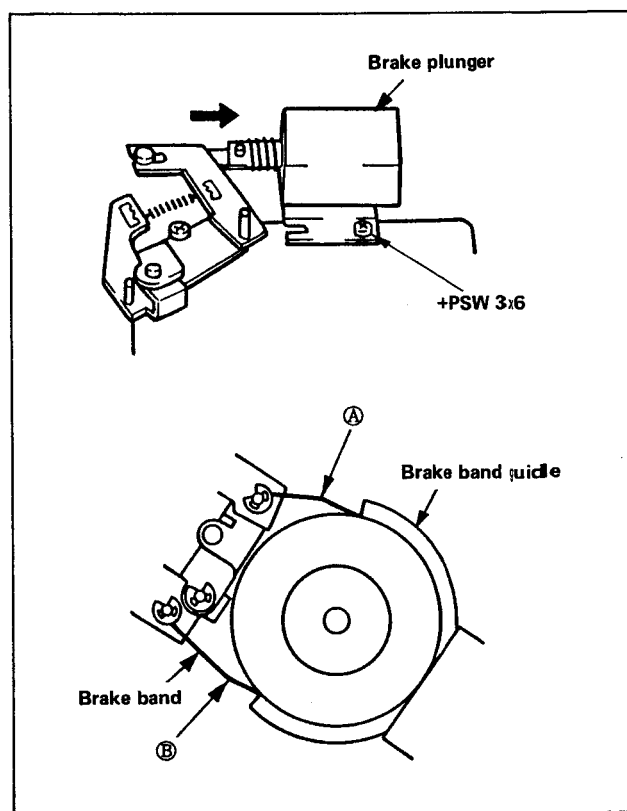


3. Pull the brake band up and away.

4. Check that the replacement brake band is straight, not bent and that the surface of the brake band is clean.

5. Mount the replacement brake band on the brake link and secure it with the two E2.3 rings.

6. While holding the brake plunger in the direction shown by the arrow in the figure below, make sure that the brake band is attached comfortably to the brake band guide and that there are no gaps between the brake band and the brake band guide. Check that the brake band is not bent at points (A) and (B) in the figure below.



7. If the brake band is bent at Point (A) or Point (B) or there are gaps between the brake band and the brake band guide, loosen the +PSW3x6 screw securing the brake plunger and adjust the position of the plunger.

8. Install the reel base, reel table, and reel sheet.

9. Check the brake torque and adjust it as explained in Section 3-8.

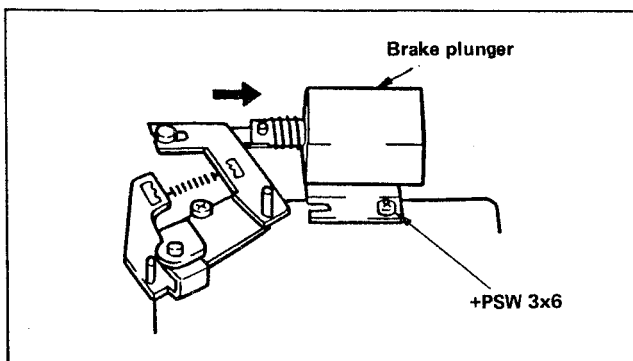
3-7-3. Brake Plunger Replacement

(1) Replacement period

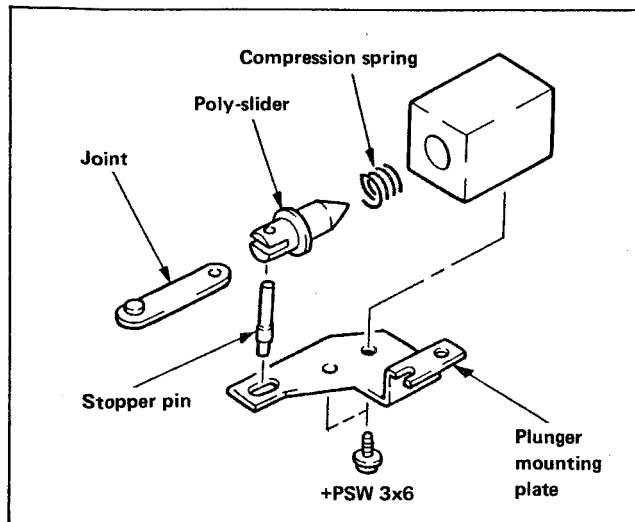
- . Replace the brake plunger after the period listed in the Periodic Inspection and Maintenance Schedule given in Section 2.
- . Replace the brake plunger if it stops working.

(2) Replacement method

1. Remove the +PSW3x6 screw securing the brake plunger, then remove the plunger unit from the brake link and remove the plunger unit.



2. Remove the two +PSW3x6 screws and remove the plunger mounting plate and plunger. At this time, the stopper pin on the plunger pole piece is also removed, so the pole is separated from the main portion of the plunger unit.



3. Make sure that the pole piece moves smoothly in and out of the main unit of the replacement plunger.
4. Use a multimeter to check that the leads (for the coil) of the replacement plunger are not cut.
5. Install the link, stopper pin, washer, and compression coil spring on the replacement plunger and secure the plunger to the plunger mounting plate with the two +PSW3x6 screws.
6. Install the plunger and its mounting plate at the position that gives the longest plunger stroke and secure it with the two PSW3x6 screws.
7. Mount the link and the joint, then install the plunger unit on the reel assembly with a +PSW3x6 screw.
8. Adjust the position of the plunger as explained in Section 3-7-2.
9. Adjust the brake torques as explained in Section 3-8.
10. Plug in the plunger leads into CN406 (S side) and CN408 (T side) of the TPC-1 board.

3-8. BRAKE TORQUE ADJUSTMENT

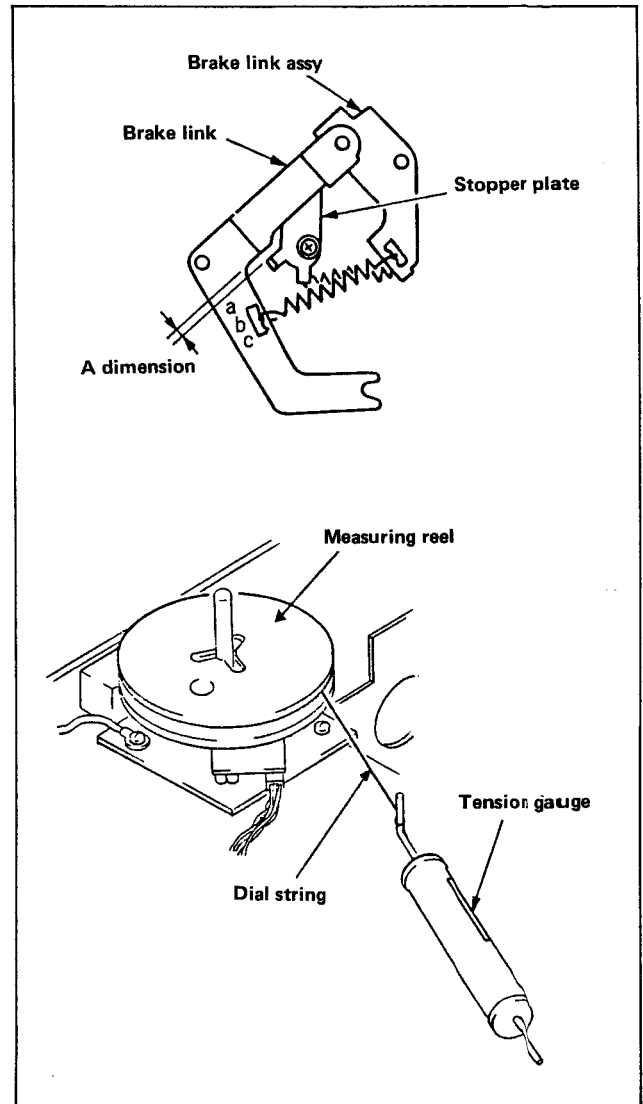
Check

1. Mount the drum open torque measuring reel (9-911-041-01) on the reel table (as in the figure below) and pull the other end of the dial string with a tension gauge.
2. Specification: Drive torque of 125g or less
Back torque of 600-800g

Adjustment

Set up the measuring reel and tension gauge as shown in the figure on the right then proceed with the adjustment.

1. If the drive torque is more than 125g, move the spring from Position b to Position a. If the back torque is less than 600g, move the spring from Position b to Position c.
2. If the torque still does not meet the specifications, loosen the +PSW3x6 screw and adjust the torque by moving the stopper plate.
600g or less Increase the dimension.
800g or more Decrease the A dimension.
(The design value for Dimension A is 0.5- 1.5mm.)



3-9. PINCH ROLLER MECHANISM REPLACEMENT AND ADJUSTMENT

3-9-1. Pinch Roller Pack Replacement

(1) Replacement period

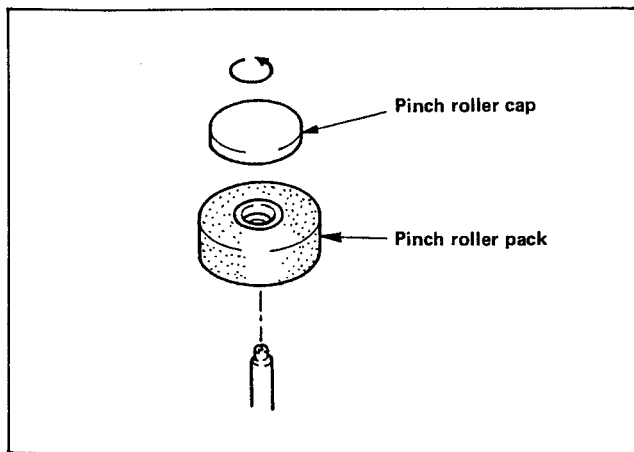
- Replace the pinch roller pack after the period listed in the periodic Inspection and Maintenance Schedule given in Section 2.

Replace the pinch roller pack if any of the following problems occur.

- The pinch roller is damaged or extremely dirty.
- Even though the pinch pressure is normal during playing, the phase meter on the CTL board runs.
- When you touch the pinch roller cap, it makes a rumbling noise similar to that made by worn out bearings.

(2) Replacement method

1. Turn the pinch roller cap counter-clockwise as shown in the figure below.
2. Pull up the pinch roller pack.



3. Check that the replacement pinch roller pack is not scratched or dirty.
4. Mount the replacement pinch roller pack on the shaft, then install the pinch roller cap.
5. Turn the pinch roller pack by hand and check that it moves smoothly.
6. Check the pinch pressure as explained in 3-9-5.

3-9-2. Pinch Preplunger Replacement

(1) Replacement period

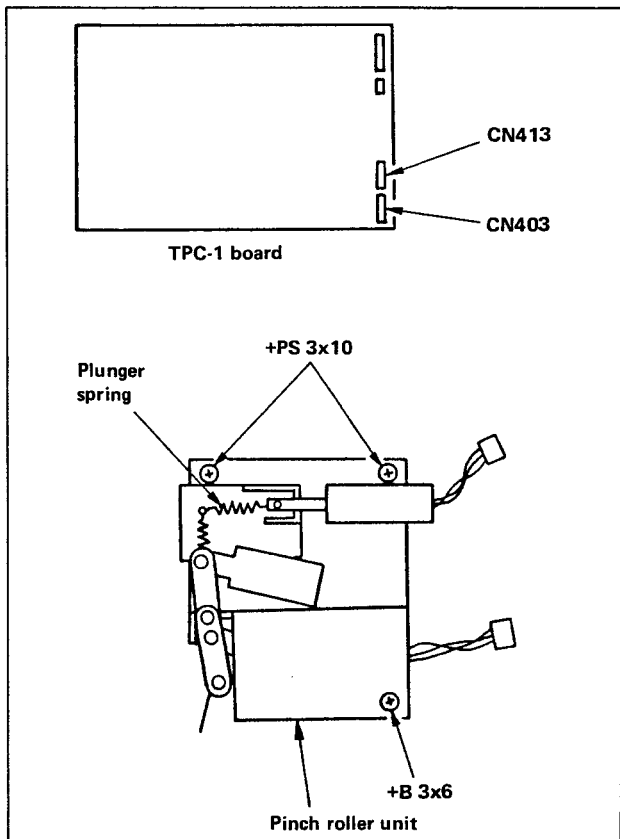
- Replace the pinch preplunger after the period listed in the Periodic Inspection and Maintenance Schedule given in Section 2.

Replace the pinch preplunger if any of the following problems occurs.

- After mounting a tape, the plunger does not move when the PLAY button is pressed.
- After a tape has been completely rewound or fast forwarded, the pinch roller is not retracted.

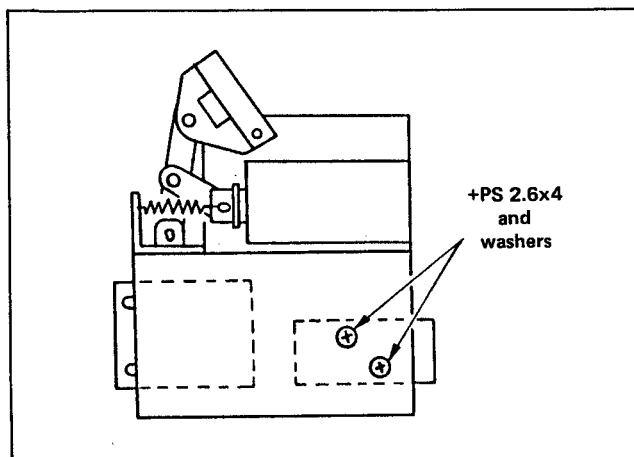
(2) Replacement method

1. Remove the CN403 and CN413 connectors from the TPC-1 board.
2. Remove the two +PS3x10 screws and the +B3x6 screw shown in the figure below.

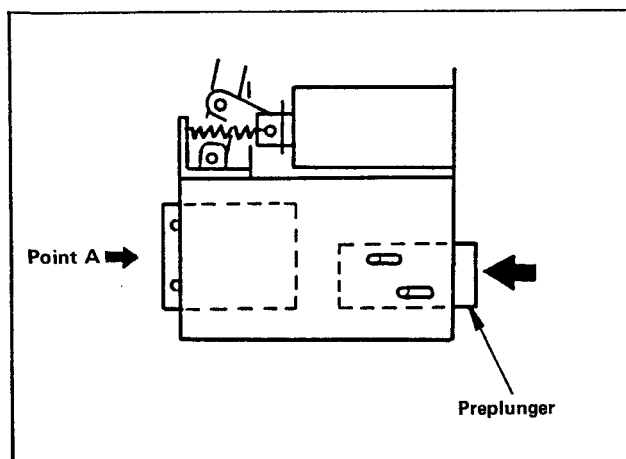


3. Remove the pinch roller unit by pulling it up.
4. Remove the plunger spring at the plunger pole side.

5. Remove the two +PS2.6x4 screws and washers, shown in the figure below.



6. Make sure that the pole of the replacement plunger and the main body of the plunger unit move in and out smoothly.
7. Use a multimeter to check that the coil of the replacement plunger is no cut.
8. Press the replacement plunger in the direction indicated by the arrow in the figure so that its stroke is as short as possible, then secure it with the two +PS2.6x4 screws and washers.
9. Press on Point A with your hand and make sure that the link moves smoothly and that the plunger is returned smoothly.



10. Assemble and adjust the pinch roller mechanism as explained in Section 3-9-4.

3-9-3. Pinch Plunger Replacement

(1) Replacement period

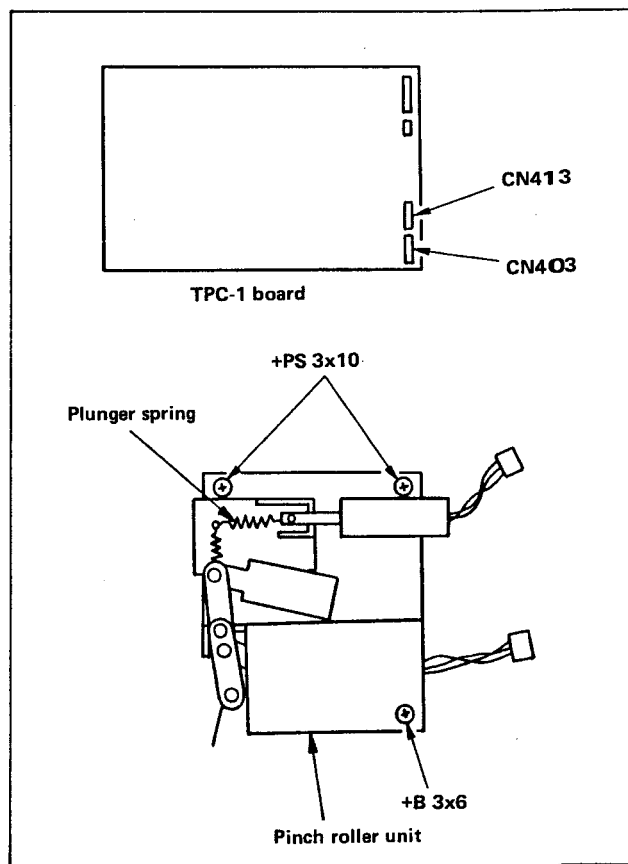
- . Replace the pinch plunger after the period listed in the Periodic Inspection and Maintenance Schedule given in Section 2.

Replace the pinch plunger if the following problem occurs.

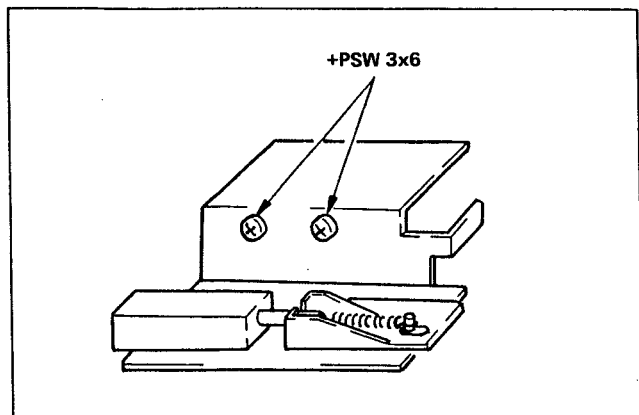
- . When the play button is pressed, the pinch roller does not press against the capstan.

(2) Replacement method

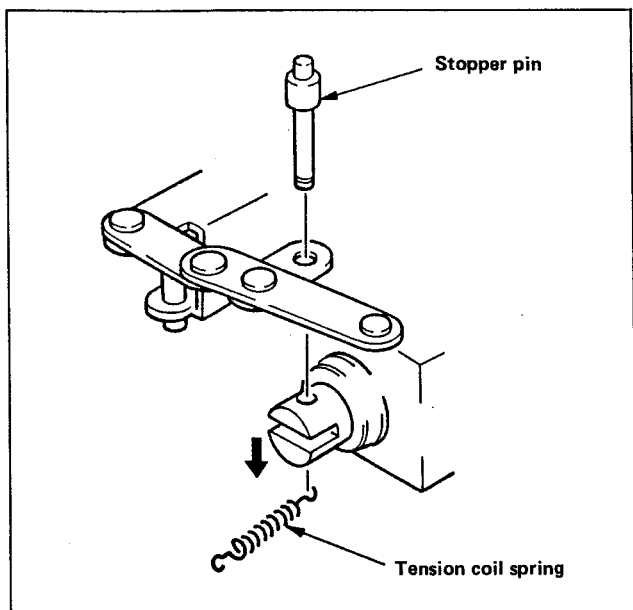
1. Remove the CN403 and CN413 connectors from the TPC-1 board.
2. Remove the two +PS3x10 screws and the +B3x6 screw shown in the figure below.



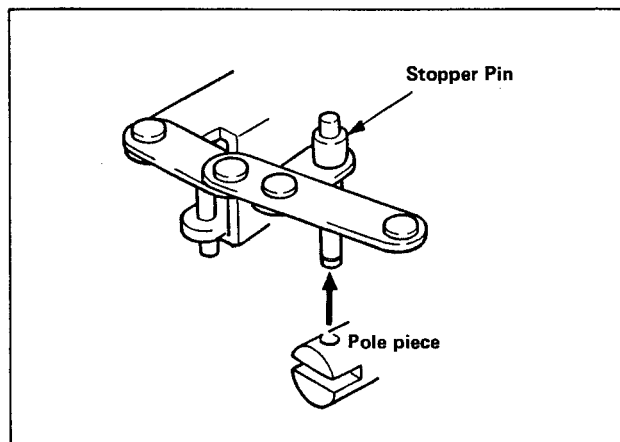
3. Remove the pinch roller unit by pulling it up.
4. Remove the two +PSW3x6 screws securing the plunger, then pull the main body of the plunger.



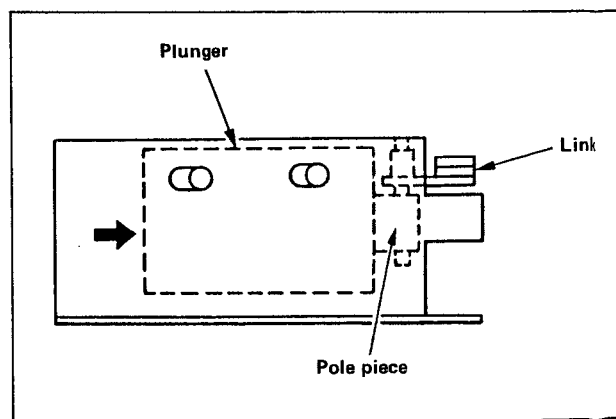
5. Remove the tension coil spring attached to the lower part of the stopper pin, as shown in the figure below.
6. Pull the pole piece, shown in the figure, down and away.



7. Make sure that the pole piece of the replacement plunger and the main body of the plunger unit move in and out smoothly.
8. Use a multimeter to check that the coil of the plunger is not cut.
9. Insert the replacement pole piece into the stopper pin from below.



10. Insert the pole piece into the main body of the plunger, then secure it to the plunger mounting plate with the two +PSW3x6 screws.
11. Install the main body of the plunger all the way in the direction of the arrow as shown in the figure below.

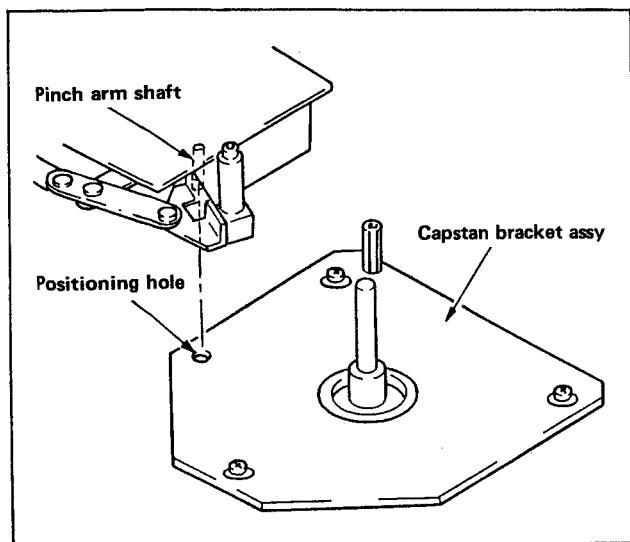


12. Hook the tension coil spring on the stopper pin.
13. Press the pole piece by hand and check that it moves smoothly and that it is returned when you let go.

3-9-4. Assembling and Adjusting the Pinch Roller Mechanism

(1) Assembly

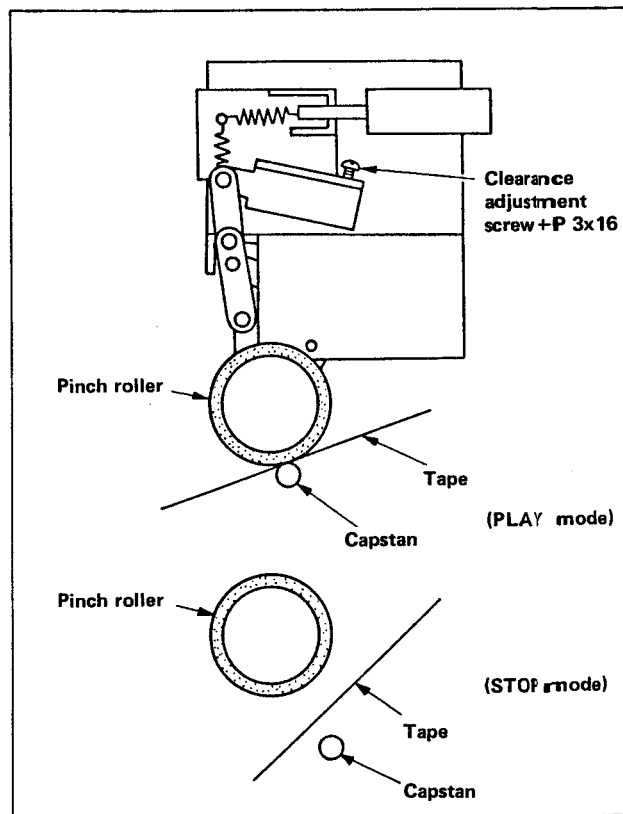
1. Drop the protrusion on the pinch arm shaft into the positioning hole on the capstan bracket assy as shown in the figure below.



2. Install the pinch roller mechanism with the two +PS3x10 screws and the +B3x6 screw.
3. Connect the lead harness of the preplunger to connector CN413 on the TPC-1 board and connect the lead harness of the pinch plunger to connector CN403 on the TPC-1 board.
4. Bundle the harness with the wire tie.

(2) Adjustment

1. Mount a blank tape and play it.
2. Turn the clearance adjustment screw +P3x16 shown in the figure below clockwise to the point where the pinch roller presses the tape lightly against the capstan.
3. Return the clearance adjustment screw back 90 degrees from the point where the pinch roller presses the tape against the capstan lightly.
4. Stop the tape and make sure that it is touching neither the pinch roller nor the capstan.

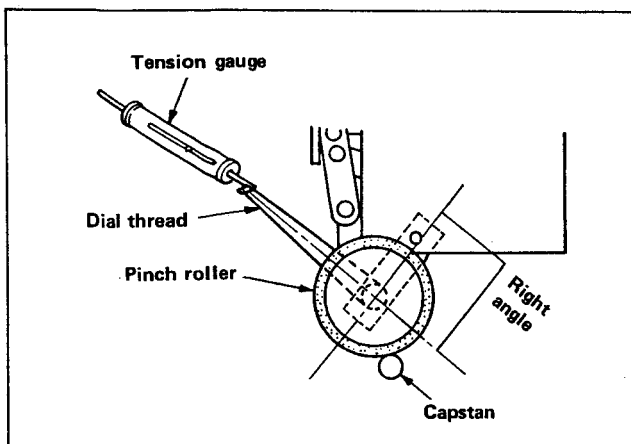


5. If the pinch roller is touching the tape, play the tape, turn the clearance adjustment screw +P3x16 to the point where the pinch roller presses the tape lightly against the capstan, then return the clearance adjustment screw less than 90 degrees.

3-9-5. Checking the Pinch Roller Pressure

Tool: 4kg Tension gauge (9-911-043-01)

1. Mount a blank tape and play it.
2. Attach the dial thread to the shaft of the pinch roller as shown in the figure below, then pull on the other end of the thread with a 4kg tension gauge.



3. While touching the pinch roller lightly with a finger, pull on the tension gauge and read off the tension at which the roller stops turning. Check whether this tension meets the specification for the pinch roller pressure.
Specification: at least 1.2kg

3-10. CAPSTAN MOTOR REPLACEMENT AND ADJUSTMENT

3-10-1. Capstan Motor Replacement

(1) Replacement period

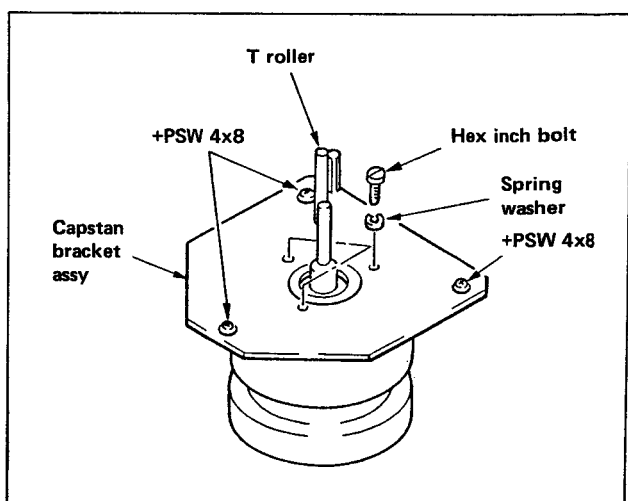
- Replace the capstan motor after the period listed in the Periodic Inspection and Maintenance Schedule given in Section 2.

Replace the capstan motor if any of the following problems occur.

- The capstan turns abnormally.
- The capstan shaft is bent.

(2) Replacement method

1. Disconnect the CN464, CN465, and CN467 connectors on the DR-54 board.
2. Remove the pinch roller unit as explained in Section 3-9-3.
3. Remove the three +PSW4x8 screws, shown in the figure below.
4. Pull the capstan motor unit up and remove it.
5. Remove the three hexagonal inch bolts, then remove the capstan motor and the capstan bracket assy, which are shown in the figure below.



6. Make sure that there are no scratches or cracks on the shaft of the replacement capstan motor.
7. Install the new capstan motor by reversing the procedure given in Steps 1-5 above.

8. Assemble and adjust the pinch roller mechanism as explained in Section 3-9-4.
9. Check the pinch pressure as explained in 3-9-5.
10. Check the tape path and make any necessary adjustment as explained in Section 3-2.
11. Check the servo gain and phase of the CTL board and make any necessary adjustments as explained in Section 3-10-2.

3-10-2. Checking and Adjusting the CTL-1 Board Servo Gain and Phase

Applicable Board No.:

1-620-310-12 only

1. Pull out the CTL board with an extension board.
2. Turn VR3 all the way to the left.
3. Connect a wow meter (Meguro MK615 or 616) between TPE and TP2.

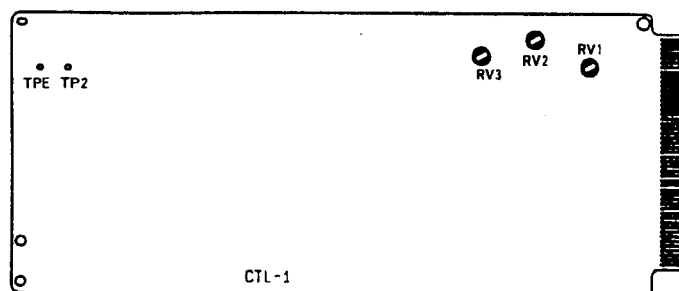
Wow meter settings: Carrier frequency

Tape Speed: 10kHz at Low speed

Tape Speed: 20kHz at High speed

L.P.F. 2kHz

UNWEIGHTED RMS



VR1: PHASE OFFSET

VR2: SERVO GAIN

VR3: PHASE GAIN

CTL board

4. Mount a blank tape and set the unit in REC PLAY mode.

MCK board settings: Fs 48kHz

Tape speed: Low

5. Adjust VR2 to obtain the wow meter readings.

CTL board	VR2
WOW Specification	no more than 0.035

(The capstan motor does not make any strange noises.)

6. Adjust VR1 so that the 4th green LED from the bottom on the phase meter of the front of the CTL board lights up.

CTL-1 board	VR1
Phase meter	4th green LED from the bottom lights up

○
○
○
○
● Lights up
○
○
○

7. Switch the Tape Speed switch on the MCK board to High and check that the 4th phase meter LED (green) from the bottom lights up. If the 3rd LED lights up, adjust VR1 using the procedure in Step 6, only adjust so that the 5th LED from the bottom lights up.

○
○
○
● Lights up
○
○
○
○

8. Check that at this time the wow meter reads no more than 0.035%.

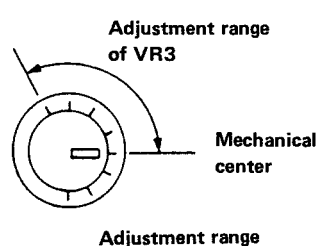
9. Check in both of the following modes that the capstan motor makes no strange noises, that the wow is no greater than 0.02%, and that the 4th or 5th LED from the bottom lights up on the phase meter.

Tape speed	Vari	FS
HIGH	+12.5%	48kHz
LOW	-12.5%	44.056kHz

10. Playback a PCM-3402 alignment tape with a tape speed of +0.2% and -0.2% and adjust RV3 so that the following conditions are met.

MCK board setting: Tape speed High
Fs 48kHz

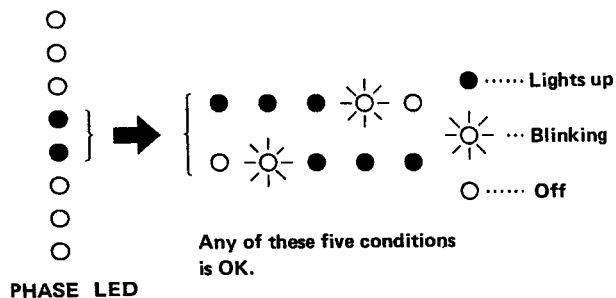
Tape Speed	Phase LED
+0.2%	3rd LED from the top lights up.
-0.2%	3rd LED from the top lights up.



○
○ Lights up for
● +0.2%
○ tape speed
○ Lights up for
● -0.2%
○ tape speed
○

If these conditions can not be met within the above adjustment range for VR3, it is ok if the 2nd LED from the top (yellow) and the 2nd LED from the bottom light up (yellow).

11. Playback a PCM-3402 alignment tape at $\pm 0\%$ and check that of the two LEDs in the middle of the phase meter, either one lights up, both light up, or one lights up and the other blinks.



Checking and Adjusting the CTL-1 Board Servo Gain and Phase

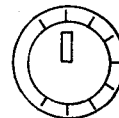
Applicable Board No.:

1-620-310-13 and higher

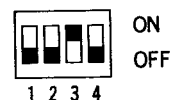
Caution: This item (3-10-2) is only applicable to CTL-1 Board with Board No. 1-620-310-13 and higher.

Refer to the previous page for the boards with Board No. 1-620-310-12.

1. Pull out the CTL-1 board with an extension board.
2. Set VR4 in the vertical position, as shown in the following figure.



3. Connect a wow meter (Meguro MK615 or 616) between TPE and TP2.
4. Set the Test switch #3 of the MCK board in the up (ON) position.



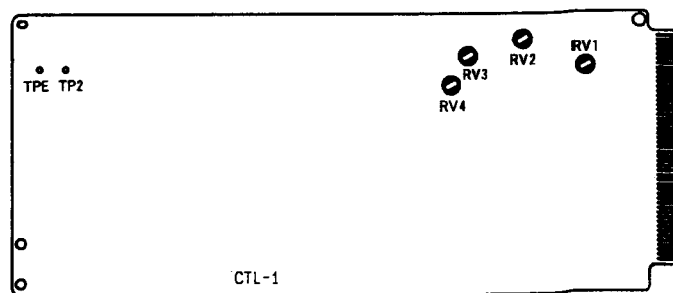
Wow meter settings: Carrier frequency

Tape Speed: 10kHz at Low speed

Tape Speed: 20kHz at High speed

L.P.F. 200Hz

UNWEIGHTED RMS



CTL-1 board

- VR1: PHASE OFFSET
- VR2: SERVO GAIN LOW SPEED
- VR3: SERVO GAIN HIGH SPEED
- VR4: PHASE GAIN

5. Mount a blank tape and set the unit in REC PLAY MODE.

MCK-1 board settings: Fs 48kHz

Tape speed: High

Function panel settings: +30% VARL SPEED

6. Adjust VR3 until the capstan motor starts to oscillate. (A steady high tone will be heard.)
7. Function panel settings: -30%
MCK board settings: Fs 44.056kHz
Tape speed: High
8. Check that the capstan motor is not oscillating. If it is oscillating, adjust RV3 until the oscillation stops.
9. MCK board settings: Fs 48kHz
Tape speed: High
Function panel settings: 0% VARI SPEED
Check that the wow is less than 0.025% by using a wow meter.

CTL-1 board	VR2
WOW Specification	0.025%

10. Adjust VR1 so that the 4th green LED from the bottom on the phase meter of the front of the CTL-1 board lights up.

CTL-1 board	VR1
Phase meter	4th green LED from the bottom lights up.

○
○
○
● Lights up
○
○
○

11. Switch the Tape Speed switch on the MCK board to Low, mount a blank tape, and set the unit in REC PLAY mode.
MCK board settings: Fs 48kHz
Tape speed: Low
Function panel settings: +30% VARI SPEED
12. Adjust VR2 until the capstan motor starts to oscillate. (A steady high tone will be heard.)
13. Function panel settings: -30% VARI SPEED
MCK board settings: Fs 44.056kHz
14. Check that the capstan motor is not oscillating. If it is oscillating, adjust RV2 until the oscillation stops.
15. Function panel settings: 0% VARI SPEED
MCK board settings: Fs 48kHz
Check that at this time the wow meter reads no more than 0.025%.

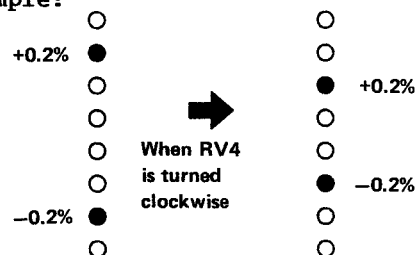
16. Check in both of the following modes that the capstan motor makes no strange noises, that the wow is no greater than 0.03%, and that the 4th or 5th LED from the bottom lights up on the phase meter.

Tape Speed	Vari	FS
HIGH	+12.5%	48kHz
LOW	-12.5%	44.056kHz

17. Play back a AR3402-1 alignment tape with a tape speed of +0.2% and -0.2% and adjust RV4 and RV1 so that the following conditions are met.

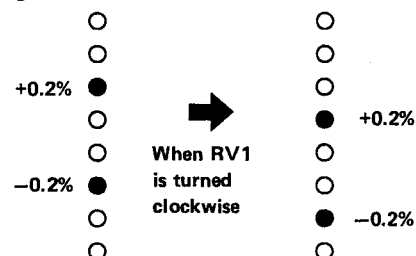
The phase servo gain is adjusted by RV4. When RV4 is turned clockwise (the gain is increased), the LED blinking becomes faster when the alignment tape with a tape speed of $\pm 0.2\%$ is played back.

Example:



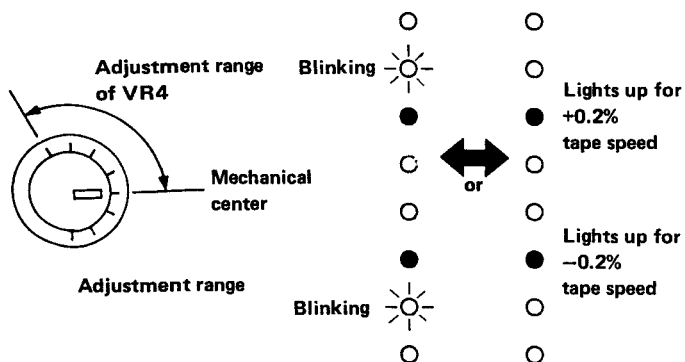
The phase servo offset is adjusted by RV1. When RV1 is turned clockwise, the position of the lighted LEDs moves downward.

Example:



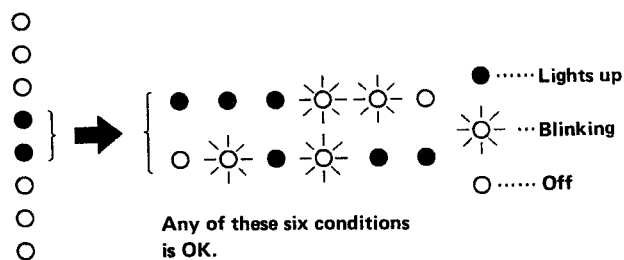
MCK-1 board settings: Tape speed High
Fs 48kHz

Tape Speed	Phase LED
-0.2%	3rd LED from the bottom lights up.
+0.2%	3rd LED from the top lights up.



If these conditions can not be met within the above adjustment range for VR3, it is ok if the 2nd LED from the top (yellow) and the 2nd LED from the bottom light up (yellow).

18. Playback the AR3402-1 alignment tape at the portion with the tape speed of $\pm 0\%$ and check that of the two LEDs in the middle of the phase meter, either one or both light up or blink.



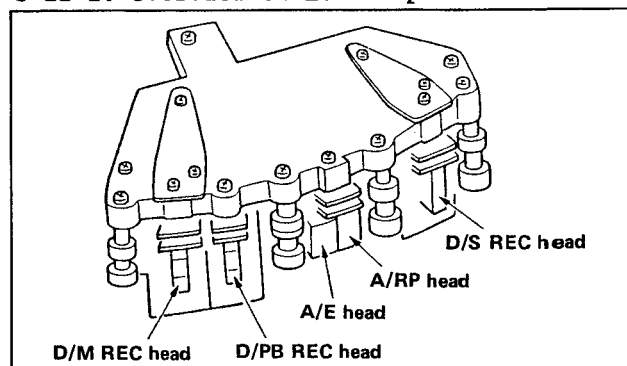
19. Set the Test switch #3 of the MCK board in the down (OFF) position.

3-11. HEAD BLOCK UNIT REPLACEMENT AND ADJUSTMENT

Tool:

Analog extension cable (J-6101-260-A)
Extension board
Head zenith block (J-6105-960-A)
1.5mm hexagonal wrench
Torque driver
M2.6 Phillips screwdriver
M4.0 Phillips screwdriver
Jeweler screwdriver

3-11-1. Overview of Head Replacement



The head block unit (HBU) of the PCM-3402 comprises the following four heads:

- Two digital recording (D/REC) heads
- One digital playback (D/PB) head
- One analog recording/playback and erase (A/E-RP) head

If these heads wear out or are damaged, they must be replaced and the new head adjusted.

There are two ways to replace heads.

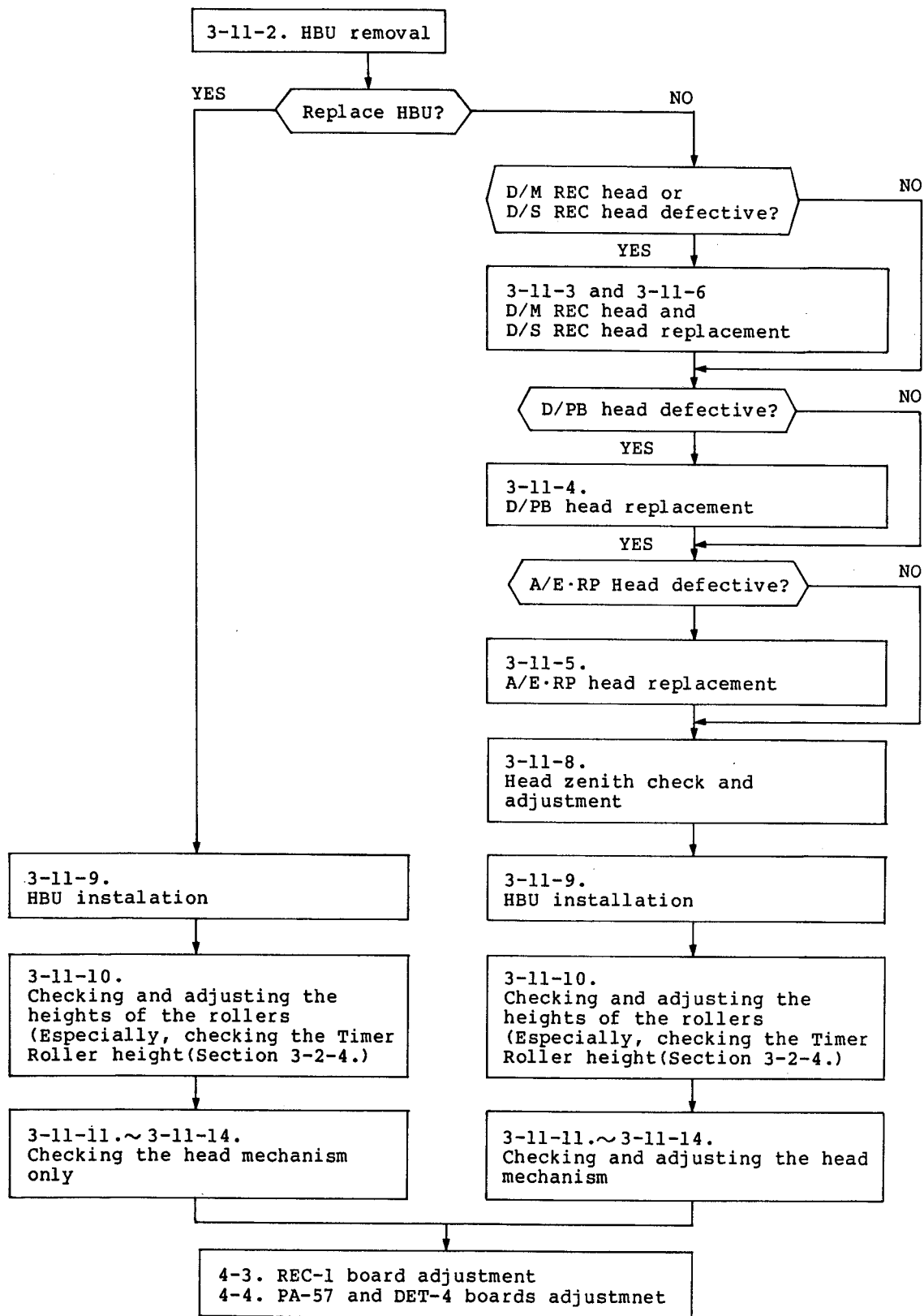
1. HBU replacement

In normal use, all the heads wear out at the same rate, so the entire head block unit is replaced.

2. Replacing individual head assemblies

If one head is damaged, that individual head assembly can be replaced.

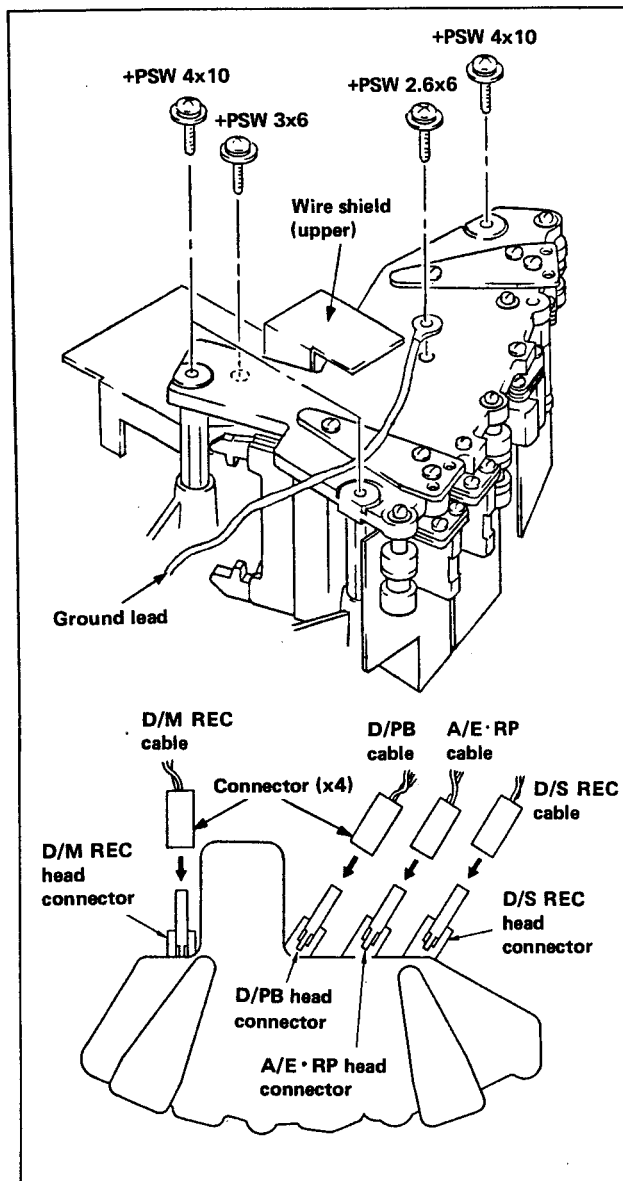
It takes only a little time to replace the head block unit (and in principle there is no need for mechanical adjustment of the individual heads). When faced with one damaged head in a head block unit that is fairly worn, either method may be used as necessary.



END
Head Replacement Procedure Flowchart

3-11-2. HBU Removal

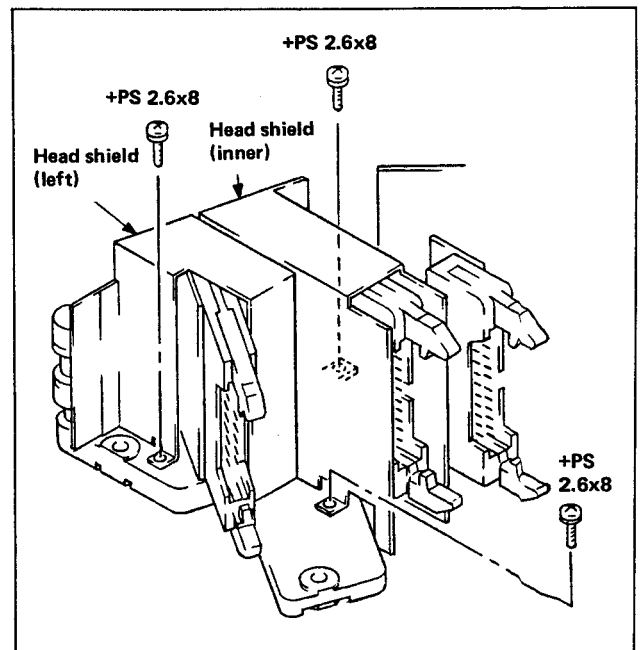
1. Remove the top plate and the ornamental panel as explained in Section 1-2-1.
2. Remove the front plate and the pad as explained in 1-2-2.
3. Remove the +PSW3x6 screw and the upper wire shield, shown in the figure below.
4. Remove the four connectors shown in the figure below.
5. Remove the +PSW2.6x6 screw and remove the ground lead, shown in the figure below.
6. Remove the three +PSW4x10 screws, then remove the head block unit. See the figure below.



3-11-3. D/M REC Head Replacement

The D/M recording head is shown in the figure below.

1. Removing the left and inner head shields
Remove the three +PS2.6x8 screws, then remove the left and inner head shields.



2. Removing the D/M REC head assembly (shown in the figure on the right)

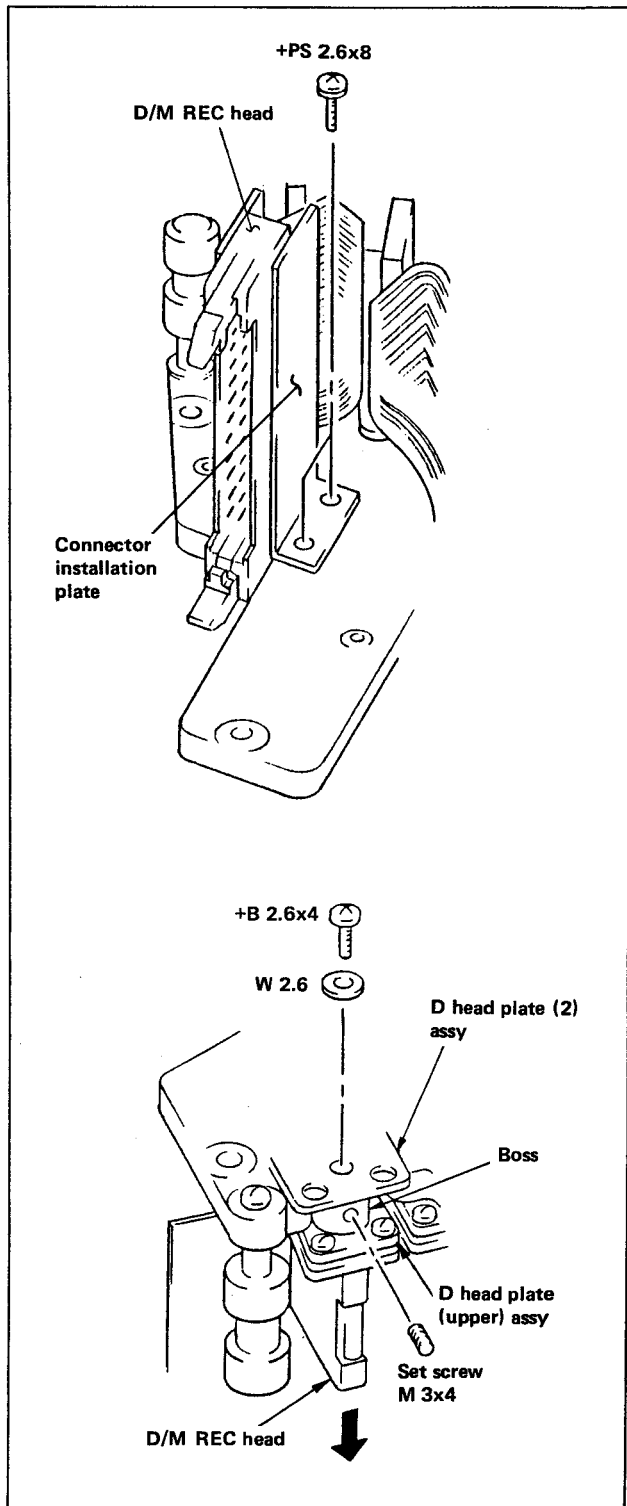
- 1) Remove the two PS2.6x8 screws, then remove the connector installation plate.
- 2) Remove the M3x4 screw
- 3) Remove the B2.6x4 screw and the 2.6 washer.
- 4) Pull the D/M REC head down and away.

Note: Wipe any screw lock solution on the head block unit base completely away.

3. Assembling the D/M REC head assembly

- 1) Remove the connector installation plate from the old D/M REC head assembly and install it on the replacement D/M REC head assembly.
- 2) Line up the pin coming out from the D head plate (2) assy with the slot on the D head plate (upper) assembly. Sandwich the compression coil spring in the hole of the D head plate (2) assy, and insert the boss of the D head plate (upper) assembly.
- 3) Use the +B2.6x4 screw and washer to lock the boss of the D head plate (upper) assembly.
- 4) Assemble by reversing the procedure given in 1)-3) of the Step 2 above.

4. Install the left and inner head shields.



3-11-4. D/PB Head Replacement

1. Removing the left and inner head shields.

- 1) Remove the three +PS2.6x8 screws, then remove the left and inner head shields. (See Step 1 of Section 3-11-3.

2. Removing the D/PB head assembly

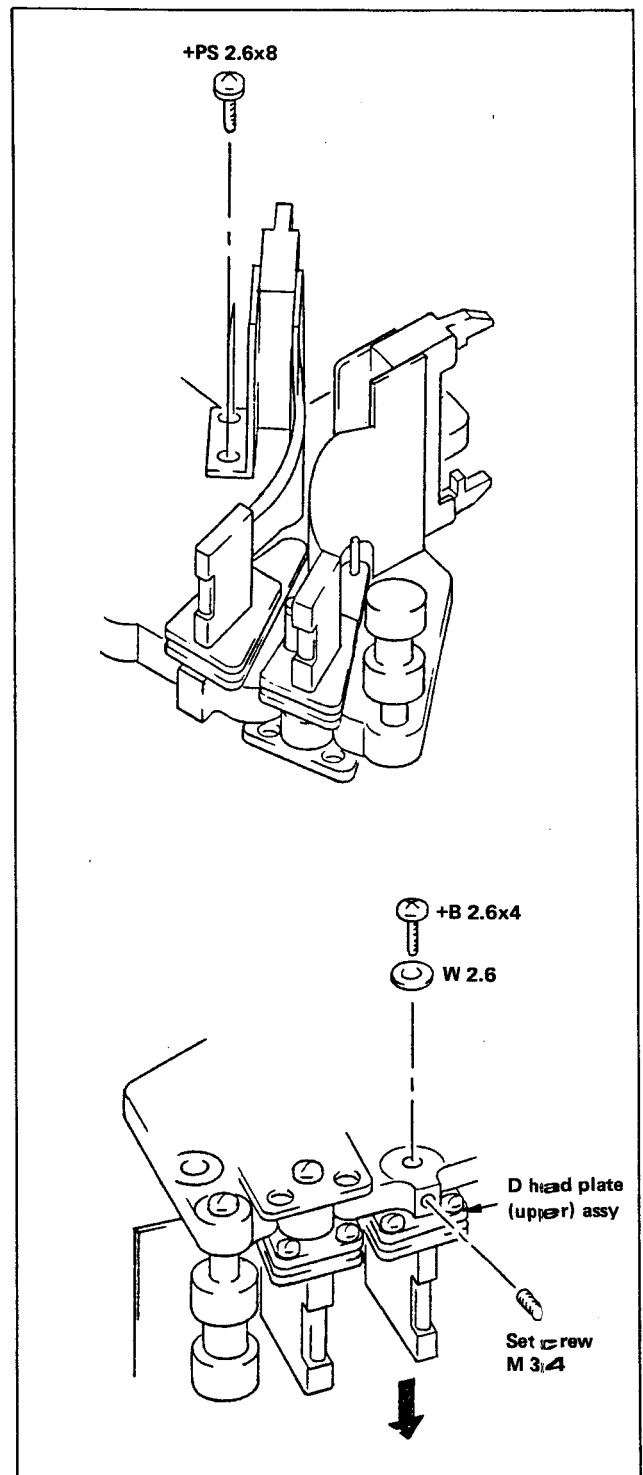
- 1) Remove the two +PS2.6x8 screws, then remove the connector installation plate from the head block unit base.
- 2) Loosen the M3x4 hex screw holding the head block unit base.
- 3) Remove the +B2.6x4 screw and the 2.6 washer.
- 4) Pull the D/PB head assembly down and away.

Note: Wipe any screw lock solution on the head block unit base completely away.

3. assembling the D/PB head assembly

- 1) Remove the connector installation plate from the old D/PB head assembly and install it on the replacement D/PB head assembly.
- 2) Line up the pin coming out from the head block unit base with the slot on the D head plate (upper) assembly. Sandwich the compression coil spring in the hole of the head block unit base, and insert the boss of the D head plate (upper) assembly.
- 3) Use the +B2.6x4 screw and washer to lock the boss of the D head plate (upper) assembly.
- 4) Assemble by reversing the procedure given in 1)-3) of Step 2 above.

4. Install the left and inner head shields.



3-11-5. A/E.RP Head Replacement

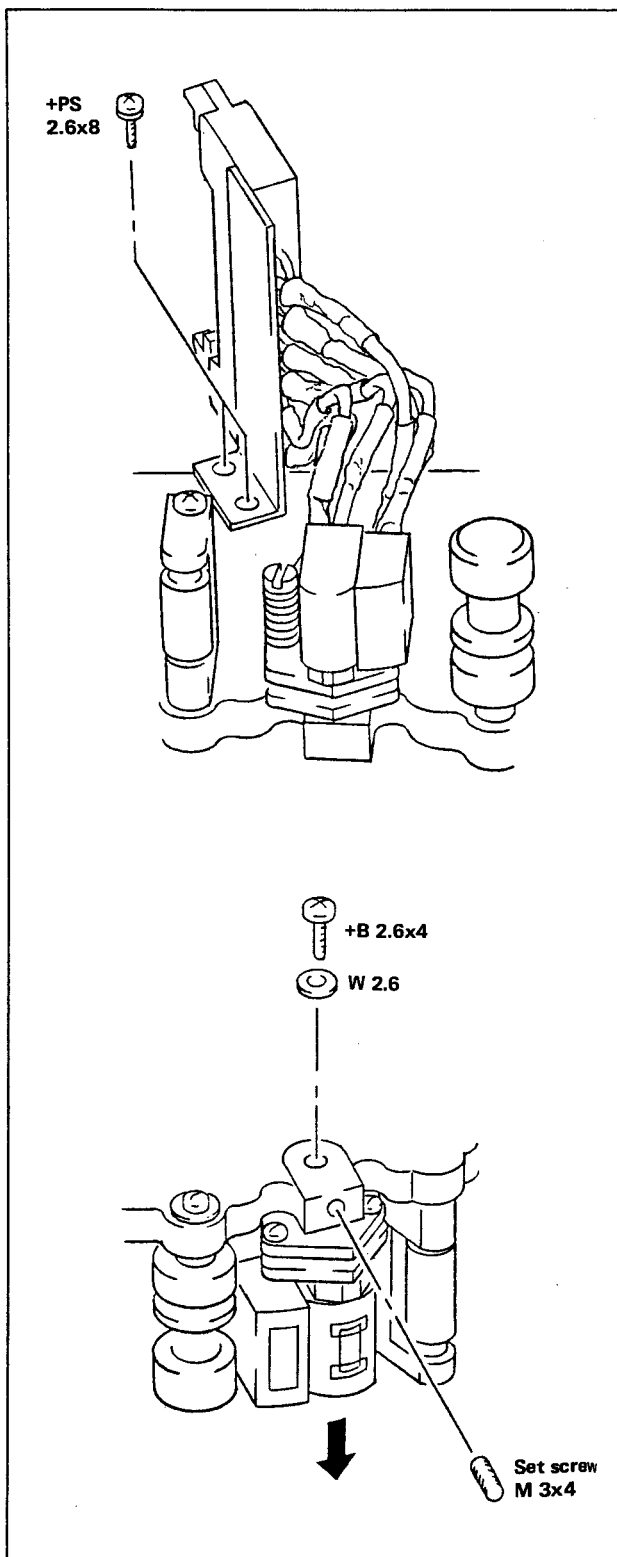
1. Removing the A/E.RP head assembly

- 1) Remove the two +PS2.6x8 screws, then remove the connector installation plate from the head block unit base.
- 2) Loosen the M3x4 set screw holding the head block unit base.
- 3) Remove the +B2.6x4 screw and the 2.6 washer.
- 4) Pull the A/E.RP head down and away.

Note: Wipe any screw lock solution on the head block unit base completely away.

2. Assembly the A/E.RP head assembly

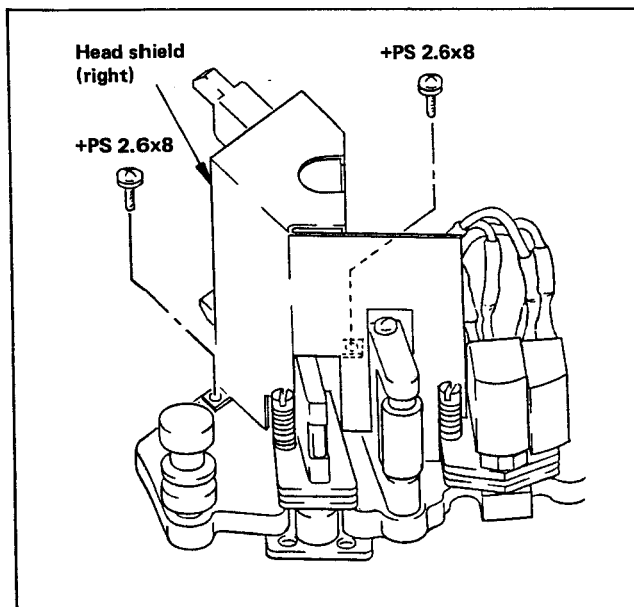
- 1) Remove the connector installation plate from the old A/E.RP head assembly and install it on the replacement A/E.RP head assembly.
- 2) Line up the pin coming out from the head block unit base with the slot on the A head plate (upper) assembly. Sandwich the compression coil spring in the hole of the head block unit base, and insert the boss of the A head plate (upper) assembly.
- 3) Use the +B2.6x4 screw and washer to lock the boss of the A head plate (upper) assembly.
- 4) Assemble by reversing the procedure given in 1)-3) of Step 2 above.



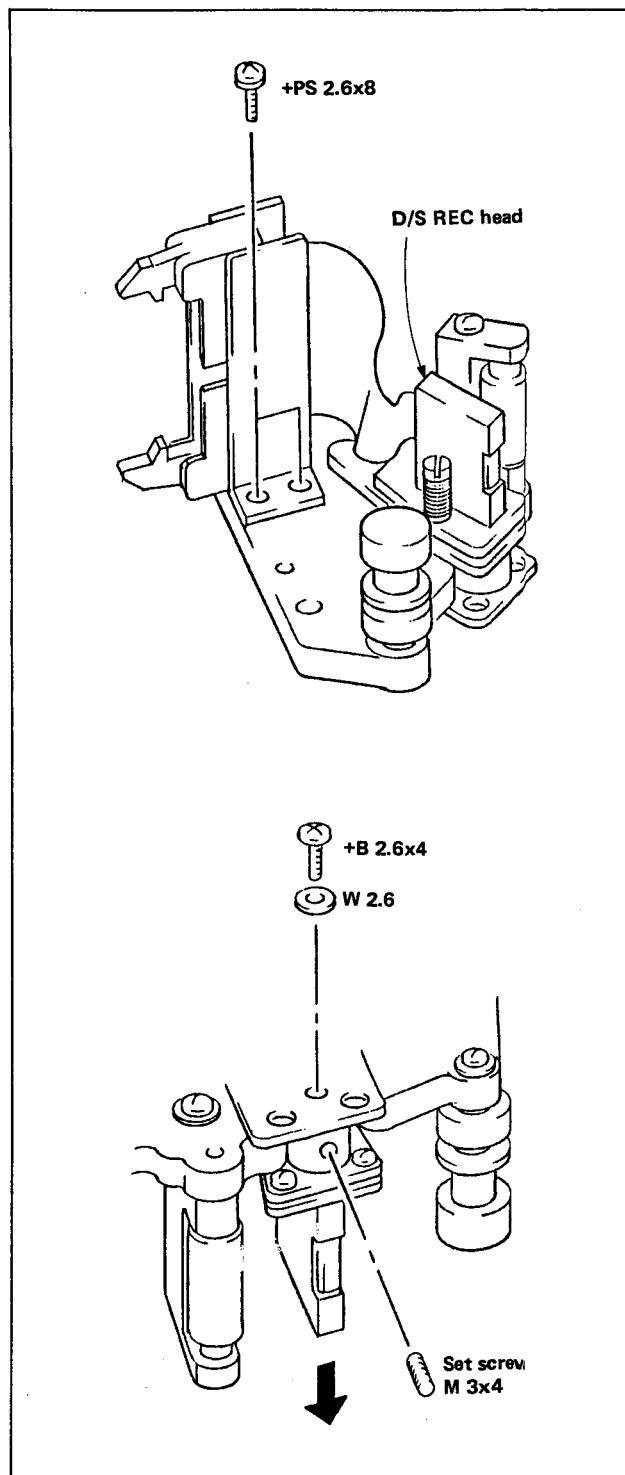
3-11-6. D/S REC Replacement

1. Removing the right head shield

- 1) Remove the two +PS2.6x8 screws, then remove the right head shield.



2. Replace the D/S REC head using the same procedure as that given for the D/M REC head in Section 3-11-3.



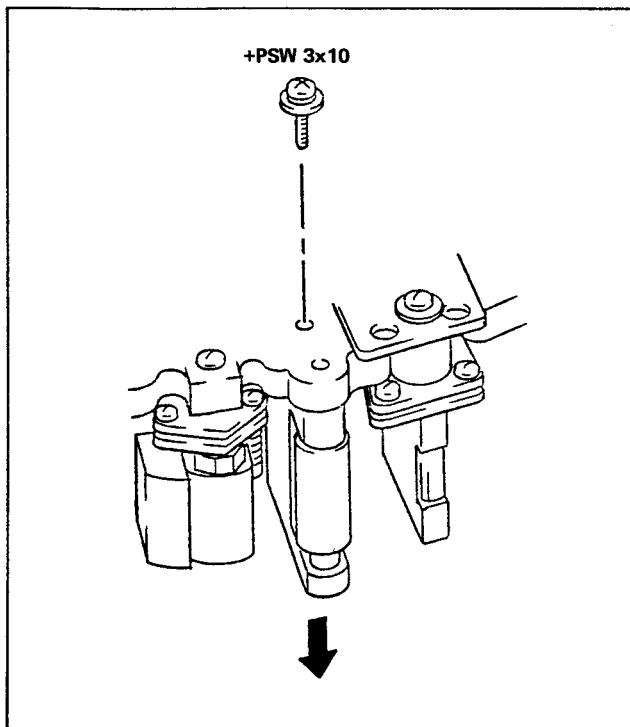
3-11-7. Scrape Filter Replacement

(1) Replacement period

- Replace the scrape filter after the period listed in the Periodic Inspection and Maintenance Schedule given in Section 2.
- Replace the scrape filter if it makes any strange noises.
- Replace the scrape filter if it is scratched.

(2) Replacement method

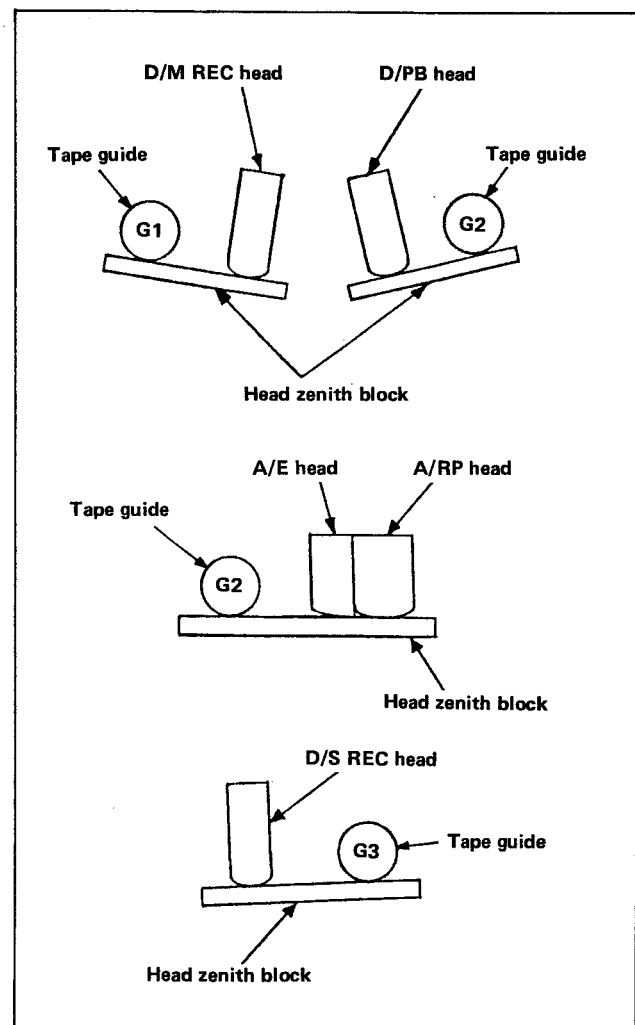
1. Remove the right head shield as explained in Section 3-11-6.
2. Remove the +PSW3x10 screw.
3. Remove the scrape filter assembly.
4. Install the new scrape filter assembly by following the procedure in Steps 1-3 in reverse.



3-11-8. Head Zenith Check and Adjustment

(1) Checking the zenith

1. Push the head zenith block (J-6105-960-A) in such a way as to avoid scratching the head, as shown in the figure below.
2. Using the tape guide as a reference as shown in the figure below, check that there is no clearance between the head zenith block and the tape guide.

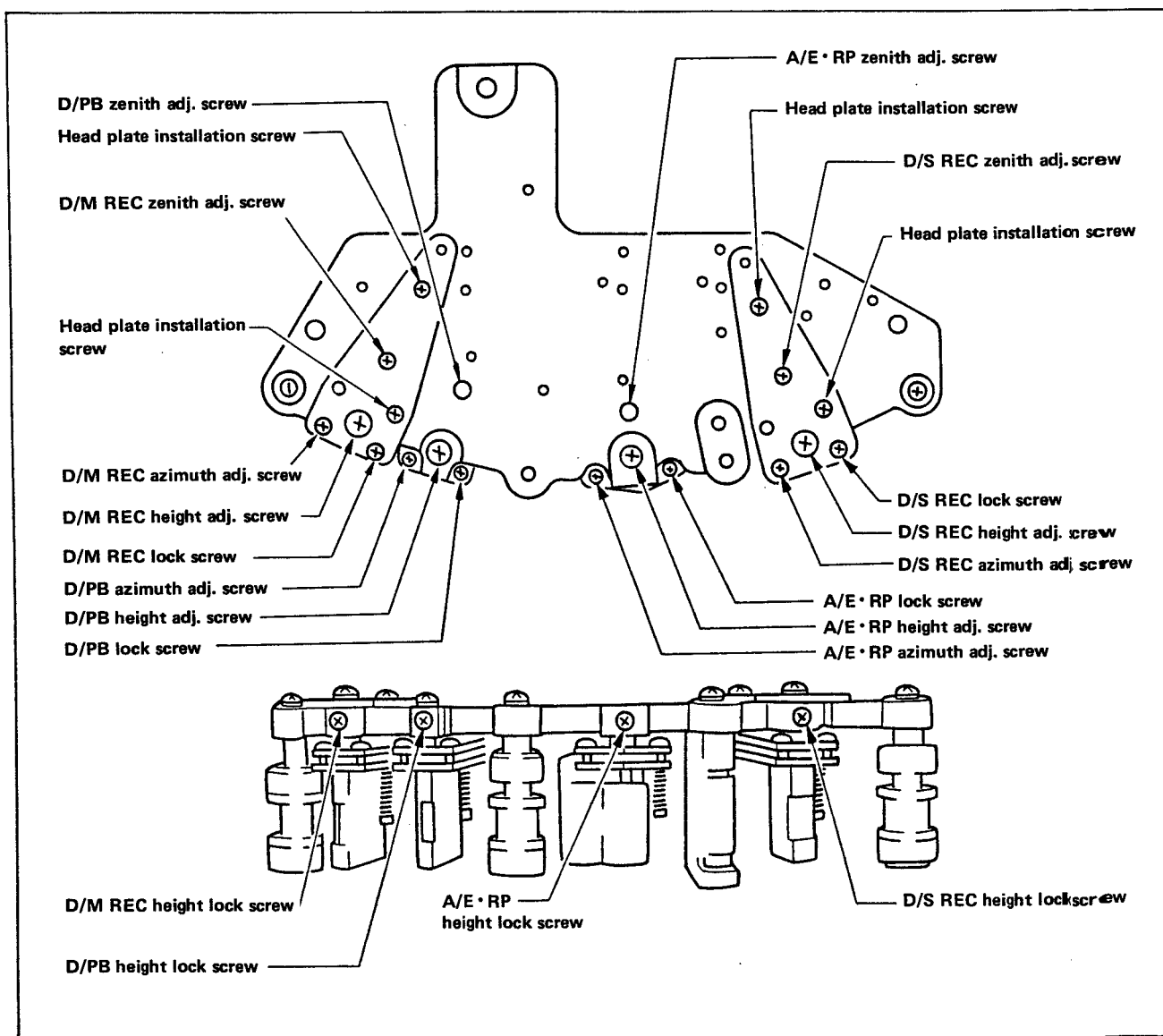


(2) Adjusting the zenith

1. If there is any clearance between the head or the tape guide and the head zenith block, turn the zenith screw to eliminate the clearance.

Note:

- . When replacing each head assembly, there is no need to adjust the head zenith because it has been adjusted at factory shipping.
- . Use a jeweler screwdriver to turn the zenith screw.

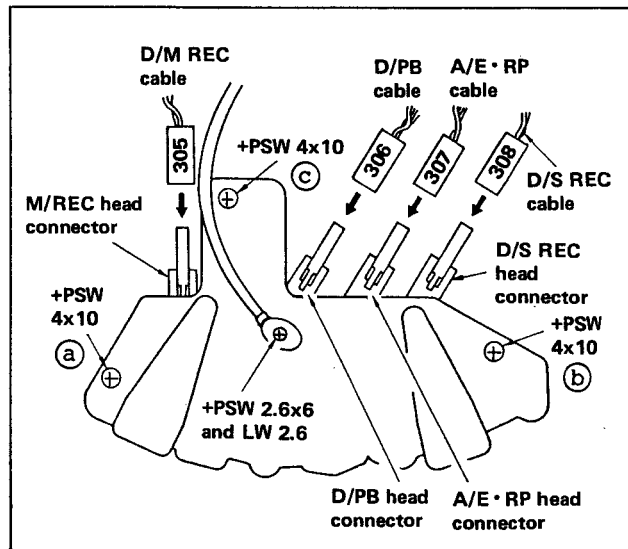


Head adjustment screws position

3-11-9. Installing the Head Block Unit

To install a head block unit on which one of the heads has been replaced or a new head block unit, use the following procedure.

1. Mount the head block unit on the head base support post and secure it with the three +PSW4x10 screws. Tighten down these screws in the order (a) → (b) → (c) with a torquedriver and a torque of 16kg-cm. (See the figure shown on the right.)
2. Install the ground lead in its original position with the +PSW2.6x6 and LW2.6 washer. (See the figure on the right.)



Adjust the heights of the rollers, and check the head mechanisms.

Follow the instructions given in the sections of 3-11-10 through 3-11-14 of their checks and adjustments on these cable connections and assembly.

3-11-10. Checking and Adjusting the Heights of the Rollers

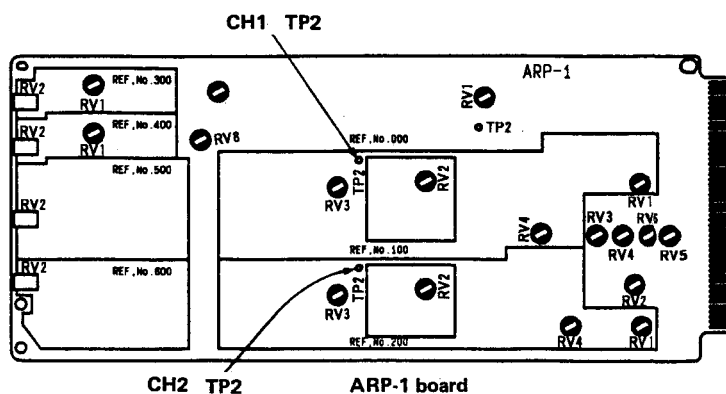
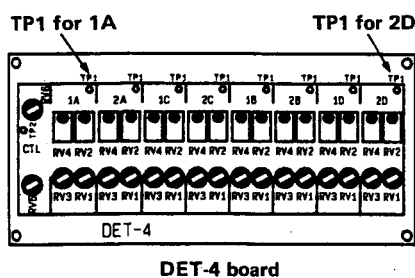
Check the heights of the rollers and if necessary adjust them as explained in Sections 3-2-1 through 3-2-4.

3-11-11. Adjusting the Head Azimuth

The head adjustment screws are shown in the figure for zenith adjustment in (2) of Section 3-11-8.

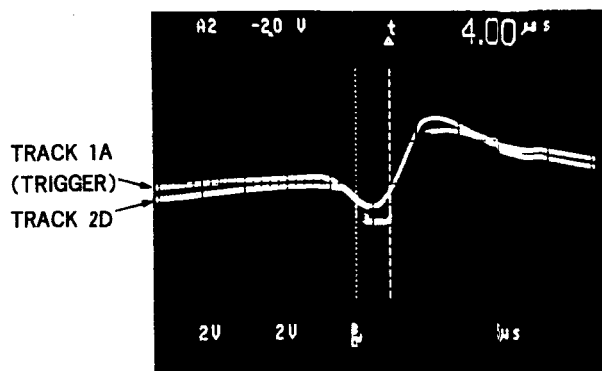
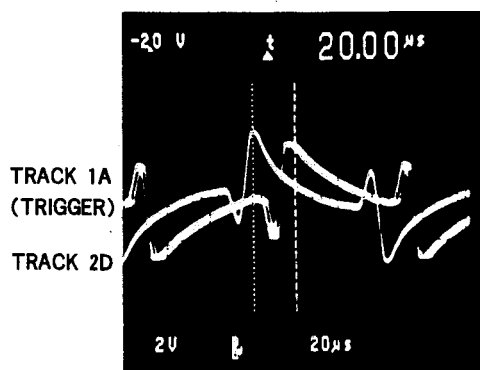
Connections and check points for adjusting the azimuth

Head	D/M REC	D/PB	D/S REC	A/E.RP
Cable	D/PB cable (306)			A/E.RP cable (307)
Head connector	D/M REC head connector	D/PB head connector	D/S REC head connector	A/E.RP head connector
Check points	DET-4 board TP1 pins for TRACK 1A and TRACK 2D			ARP-1 board TP2 pins for CH1 and CH2



(1) Adjusting the azimuth of the D/M REC head

1. Plug the D/PB cable into the D/M REC head connector.
2. Connect the oscilloscope to the TP1 pins of TRACK 1A and TRACK 2D on the DET-4 board.
3. Play the D-REC azimuth section of the AR3402-1 alignment tape.
4. Loosen the D/M REC lock screw no more than one turn.
5. Adjust the D/M REC azimuth screw so that the phase difference shown in the figure above is 0.
6. Turn the D/M REC azimuth screw further clockwise until the phase difference is 20usec.
7. Tighten the lock screw so that the phase difference is 0.

Adjustment specification: $0 \pm 2\mu\text{sec}$ 

Note: Always check that the height lock screws for all the heads are tight before adjusting the azimuth.

(2) Adjusting the azimuth of the D/PB head

1. Plug the D/PB cable into the D/PB head connector.

2. Adjust the azimuth of the D/PB head in the same manner as described in (1) "Adjusting the azimuth of the D/M REC head".

(3) Adjusting the azimuth of the D/S REC head

1. Plug the D/PB cable into the D/S REC head connector.

2. Adjust the azimuth of the D/S REC head in the same manner as described in (1) "Adjusting the azimuth of the D/M REC head".

(4) Adjusting the azimuth of the A/E.RP head

Tool: Analog extension cable

J-6101-260-A

Extension board

1. Plug the A/E.RP cable into the A/E.RP head connector with an analog extension cable.

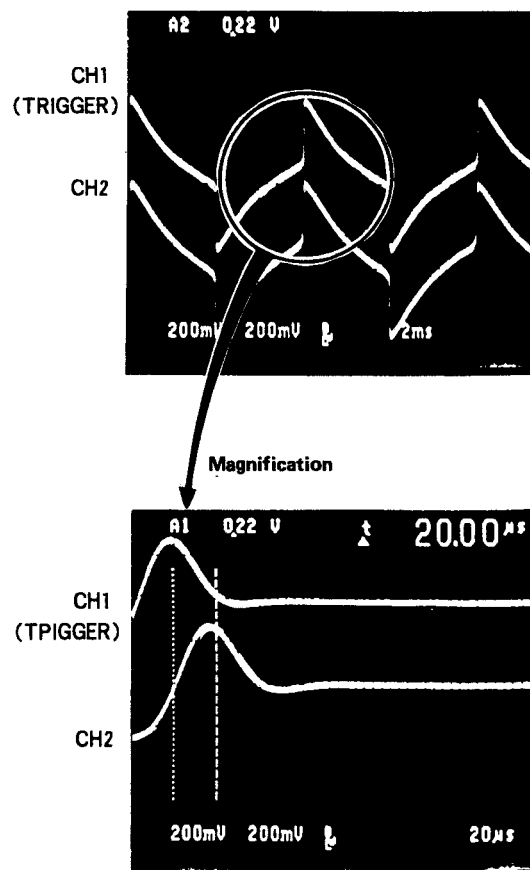
2. Connect the oscilloscope to TP2 of CH2 and TP2 of CH1 of the ARP-1 board.

3. Play the A-RP azimuth section of the AR3402-1 alignment tape.

4. Loosen the A/E.RP head azimuth lock screw.

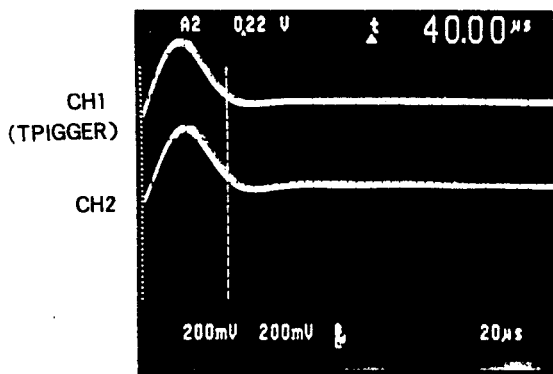
5. Adjust the A/E.RP head azimuth screw so that the phase difference shown in the figure below is 0.

6. Turn the A/E.RP head azimuth screw further clockwise until the phase difference is 20usec.



7. Tighten the lock screw so that the phase difference is 0.

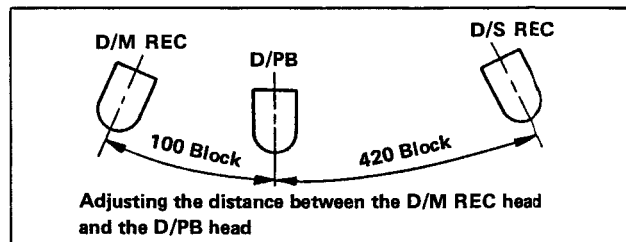
Adjustment specification: $0 \pm 20\mu\text{sec}$



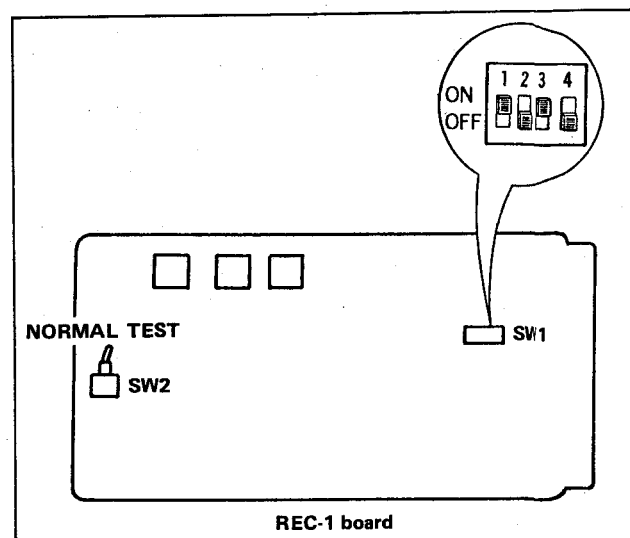
Note: Always check that the height lock screws for all the heads are tight before adjusting the azimuth.

3-11-12. Head Distance Adjustment

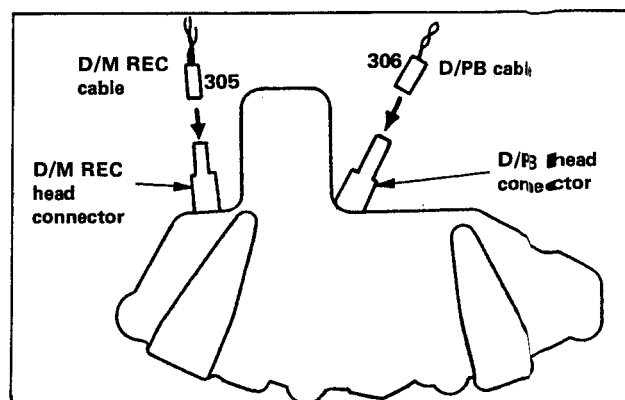
The head distance is only adjusted for the digital heads shown in the figure below. The distance for the analog head is determined by the mechanical precision, so it does not need to be adjusted.



1. Switch on No. 1 and No.3 of DIP switch SW1 on the REC-1 board, shown in the figure below. The 12-block and 4-block frequency test signals are generated. Set SW2 to Test.



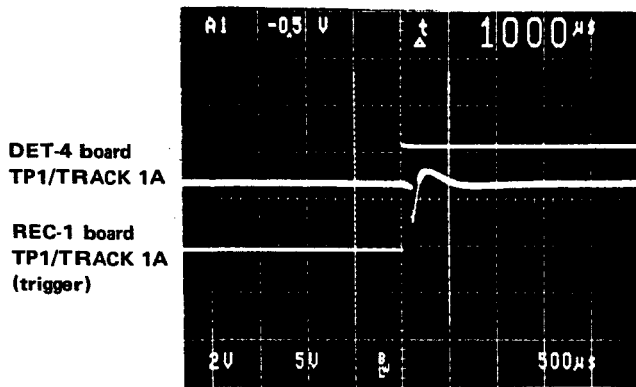
2. Connect the head connector and cable as shown in the figure below, mount a blank tape, and record in ADVANCE REC mode.



3. Loosen the two +B2.6x6 screws holding the head plate. The position of these two screws is shown in the figure for adjusting the head zenith in Section 3-11-8.

4. While observing the waveforms at the TP1 pin of TRACK 1A of the REC-1 board and at the TP1 pin of TRACK 1A of the DET-4 board, swing the D/REC head assembly to the left or right with an eccentric screwdriver so that the negative pulse at TP1 of the DET-4 board matches the rising edge of the signal at TP1 of the REC-1 board as shown in the figure below. Observe the phase meter of the CTL board to make sure that the servo is locked.

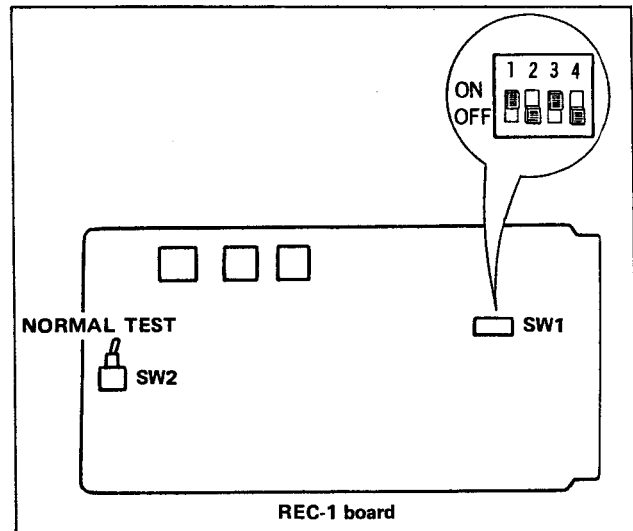
Adjustment specification: $0 \pm 500\mu\text{sec}$



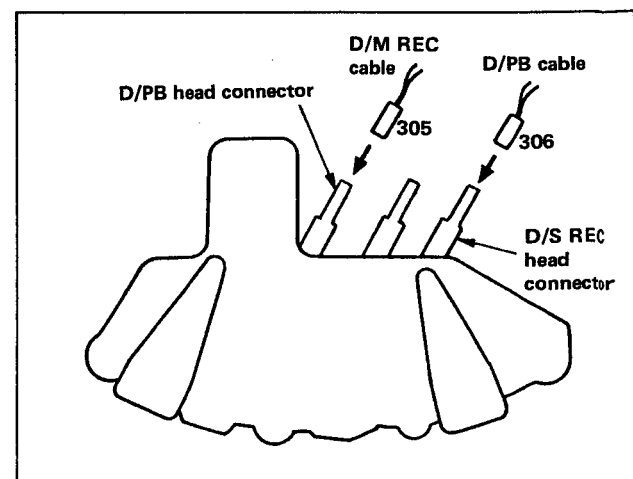
5. Tighten the two +B2.6x6 screws loosened in Step 3 with a torque of 6kg-cm, making sure that the head assembly does not move as you tighten these screws.

Adjusting the clearance between the D/PB head and the D/S REC head

1. Switch on Pins 1 and 3 of DIP switch SW1 on the REC-1 board. (See the figure below.) The 12-block and 4-block frequency test signals are generated. Set SW2 to Test.



2. Connect the cable and head connector as shown in the figure below, mount a blank tape, and record in monitor mode.

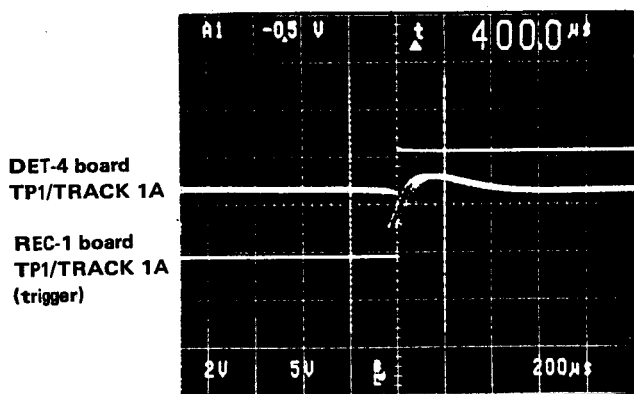


3. Loosen the two +B2.6x6 screws.

4. While observing the waveforms at the TP1 pin of TRACK 1A of the REC-1 board and at the TP1 pin of TRACK 1A of the DET-4 board, swing the D/S REC head assembly to the left or right with an eccentric screwdriver so that the negative pulse at TP1 of the DET-4 board matches the rising edge of the signal at TP1 of the REC-1 board as shown in the figure below.

Observe the phase meter of the CTL-1 board to make sure that the servo is locked.

Adjustment specification: $0 \pm 200\mu\text{sec}$



5. Tighten the two +B2.6x6 screws loosened in Step 3 with a torque of 6kg-cm, making sure that the head assembly does not move when you tighten these screws.

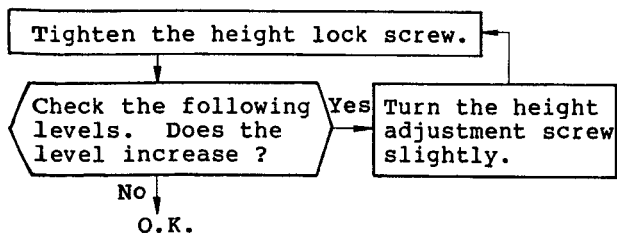
3-11-13. Head Height Adjustment

Here are the connections and check points for adjusting the heights of the heads.

Head	D/M REC	D/PB	D/S REC	A/E.RP
Head connector	D/M REC head connector	D/PB head connector	D/S REC head connector	A/E.RP head connector
Cable	D/PB cable			A/E.RP cable
Check point	DET-4 board TP1 pin for TRACK 2C on the DET-4 board			TP2 pins for CH1 and CH2 on the ARP-1 board

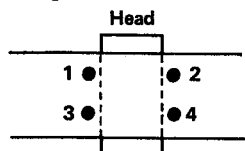
(1) Adjusting the height of the D/M REC head and the D/S REC head

1. Connect the oscilloscope output to a voltage meter.
2. Connect the oscilloscope to TP1 of TRACK 2C on the DET-4 board.
3. Connect the head connector and cable as indicated in the table above and play the D-REC height section of the AR3402-1 alignment tape.
4. Loosen the height lock screw for each of the digital recording heads, adjust the height adjustment screw for each REC head to provide the maximum playback output, and tighten down the height lock screw for each digital REC head.



Check method

Push the four points of the tape slightly with your finger.



- 1 or 2: The level increases. The head is low.
- 3 and 4: The level increases. The head is high.
- 1 and 4: The level increases. The head is tilted toward the left. (Azimuth)
- 2 and 3: The level increases. The head is tilted toward the right. (Azimuth)

Note: If the height lock screw is not tightened down, the tape contact will be inadequate and the output level will be low. Adjust the height to give the maximum output when the height lock screw is tightened down.

(2) Adjusting the height of the D/PB RP head

1. Use the D-PB height section of the AR3402-1 alignment tape and adjust the height of the D/PB head in the same way as just explained for the digital REC heads.

(3) Adjusting the height of the A/E RP head

1. Connect the head connector and cable listed in the table above, then connect the oscilloscope and voltmeter to the specified check points.
2. Play the A-RP section of the AR3402-1 alignment tape and adjust the A/E RP head in the same way as explained for the D/M REC and D/S REC heads.

3-11-14. Head Contact Checking

Here are the connections and check points for checking the head contact.

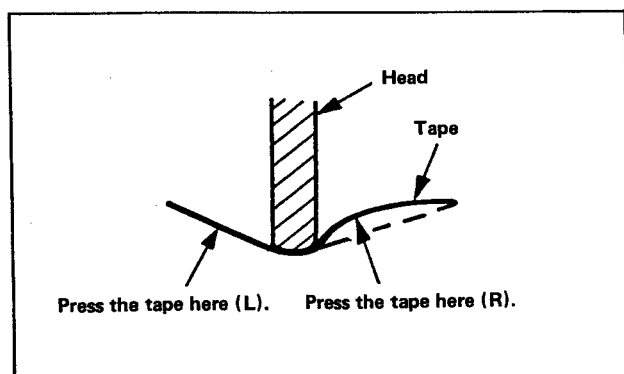
Head	D/M REC	D/PB	D/S REC	A/E.RP
Head connector	D/M REC head connector	D/PB head connector	D/S REC head connector	A/E.RP head connector
Cable	D/PB cable			A/E.RP cable
Check point	TP1 pin for TRACK 2C on the DET-4 board			TP2 pin for CH1 on the ARP-1 board

Checking the tape contact for the D/M REC head, D/S REC head, and D/PB head

1. Connect the oscilloscope to the TP1 pin of TRACK 2C on the DET-4 board.
2. Connect the head connector and cable as indicated in the table above and play the Digital Head Height section of the AR3402-1 alignment tape AR3402-1. (Use the REC HEIGHT section for REC head and PB HEIGHT section for PB head.)
3. Press the tape just to the left and right of the D/M REC, D/S REC and D/PB heads lightly, as indicated in the figure below, and check that the amplitude of the waves does not increase.

Checking the A/E.RP head contact

1. Connect the oscilloscope to ANALOG OUT CH1(A1) and CH2 (A2) (XLR connector) on the rear panel (or take playback signals from TP2 of CH1 and TP2 of CH2 on the ARP-1 board).
2. Connect the head connector and cable as indicated in the table above, then playback the Analog Head Height section of the AR3402-1 alignment tape.
3. Press the tape just to the left and right of the A/E.RP head lightly and check that the amplitude of the waves does not increase.



3-12. FAN REPLACEMENT

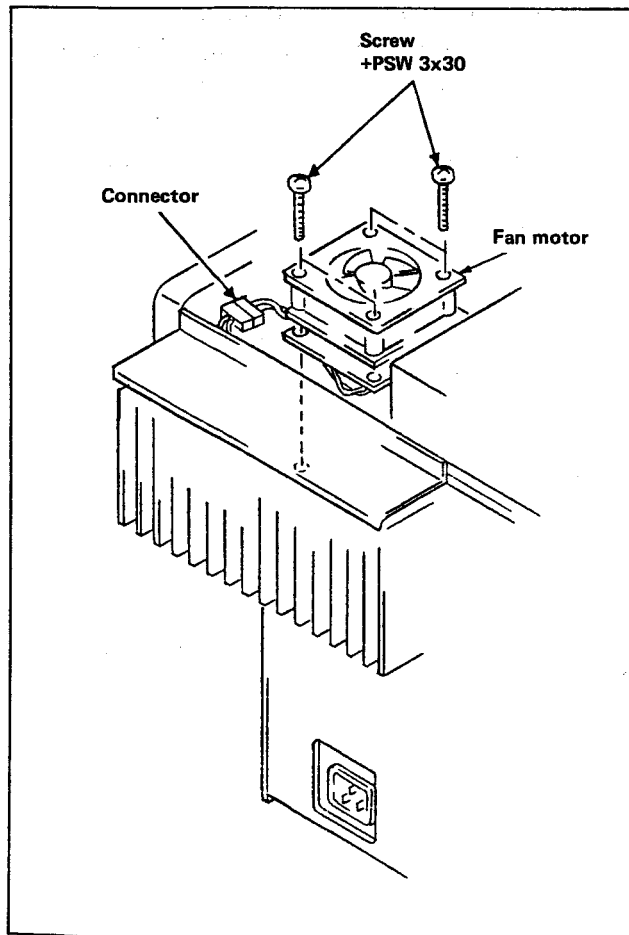
Replacement period

- Replace the fan after the period listed in the Periodic Inspection and Maintenance Schedule given in Section 2.
- Replace the fan if it stops turning.
- Replace the fan if it makes funny noises when it turns.

Replacement method

1. Remove the top plate.
2. Remove the connector for the fan motor.
3. Remove the four +PSW3x30 screws, then remove the fan motor. (See the figure below.)

4. Turn the replacement fan motor by hand and check that it moves smoothly without making any strange noises.
5. Install the replacement fan motor by reversing the procedure given above for removal.
6. Switch on the power and check that the fan turns.



SECTION 4 ELECTRICAL ADJUSTMENTS

INTRODUCTION

This section covers the electrical adjustments required for board repair and maintenance. All of these adjustments assume that all functions other than the one being adjusted are operating normally. When the trouble affects more than one adjustment, we recommend to check all adjustments preceding and subsequent to the adjustment to be performed. This section covers adjustments of switches and controls in the main unit required for meeting specifications. Details on external switches, controls, and operations are in the Operation Manual.

Initial settings

(switch settings for each board)

Board	Switch Name	Mode
SEP-1	EE/PB	PB
ED-16	SPLICE EDIT X' FADE TIME	1
ED-17	E, EDIT X' FADE TIME	2
MCK-1	LOCK MODE	HI
	AUTO CUE	OFF
	Fs	48k
	SPEED	INT
	PROGRAM TC	OFF
MCK-1	REC TC	INT
DIO-2	SDIF-2/AES-EBU	SDIF-2
DAD-1	DIGITAL IN/ANALOG IN	AIN
	EMPHASIS	OFF

Recommended equipment

Equipment	Model	Standard
Oscilloscope	TEKTRONIX 455	2ch, 60MHz
AC voltmeter	HP 400FD	RMS values dB display
Audio meter signal generator level meter distortion meter	ST-1710A	

Note: LINE MONITOR MODE of the switch and control settings means to press any of the Monitor Signal Select Buttons.

AUX MONITOR MODE means to press either of the Auxiliary Track Signal Select Buttons.

4-1. ARP-1 BOARD ADJUSTMENT

This section explains how to adjust the audio signal level and the AUX TRACK recording and playback.

4-1-1. Line Input /output Adjustment

This adjustment should be carried out whenever the ARP-1 or DAD-1 board is replaced.

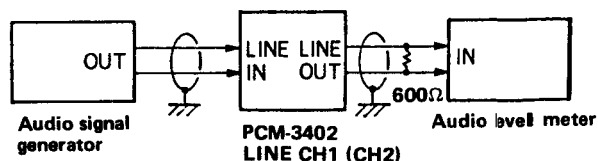
Equipment required

Audio signal generator

Audio level meter

Oscilloscope

Connections



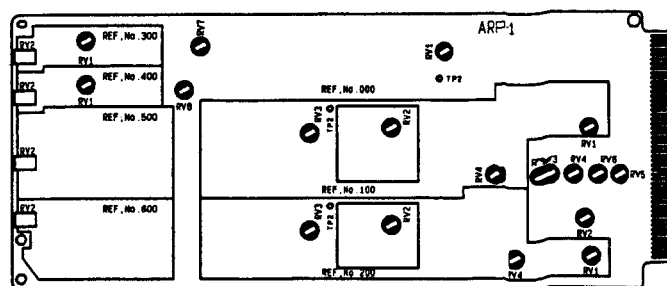
Switch and control settings

Monitor housing	REF MARKER	: -20dB
	SCALE SW	: 0.2dB
	LINE MONITOR MODE	: INPUT
MCK-1 board	TAPE SPEED	: HI
	Fs MODE	: 48k
DAD-1 board	EMP ON/OFF	: OFF
	AIN/DIN	: AIN

Adjustment locations

RV301, 302, 501

RV401, 402, 601



Adjustment procedure

1. Input CMRR adjustment

Input signals with the same phase and same amplitude to the HOT and COLD inputs (+24dBs, 10kHz).

Connect the audio level meter or oscilloscope to TP301 (CH1) and TP401 (CH2).

Specification: minimize the output.

RV301(CH1)

RV401(CH2)

2. Input level adjustment

Set the input to 1kHz and +4dBs.

Specification: Adjust so that the -20dB position on the digital level meter lights up and so that when the input is increased by +0.1dB, the LED segment (-18dB) just above -20dB lights up.

RV302(CH1)

RV402(CH2)

3. Output level adjustment

Set the input to 1kHz and +4dBs.

Read off the output from the level meter.

Specification : ± 0.1 dBs.

RV501(CH1)

RV601(CH2)

4-1-2. 1kHz Test Signal Oscillation Level Adjustment

Equipment required

Frequency counter

Oscilloscope

Connections

Connect the oscilloscope to TP4 of the ARP-1 board and monitor the frequency with the frequency counter.

Switch and control settings

Monitor housing	REF MARKER	: -20dB
	SCALE SW	: 0.2dB
	LINE MONITOR MODE	: INPUT
MCK-1 board	TAPE SPEED	: HI
	Fs MODE	: 48k
DAD-1 board	EMP ON/OFF	: OFF
	AIN/DIN	: AIN
ARP-1 board	SW1 OSC ON/OFF	: ON

Adjustment procedure

1. Oscillation frequency adjustment

Specification: $1\text{kHz} \pm 0.005\text{Hz}$

RV7

2. Oscillation level adjustment

Adjust RV8 so that -20dB on the digital level meter lights up (both CH1 and CH2).

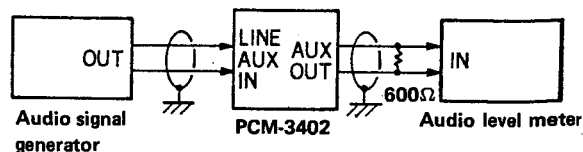
4-1-3. AUX Input/output Level Adjustment

Equipment required

Audio signal generator

Audio level meter

Connections



Switch and control settings

Monitor housing	REF MARKER : -20dB
	SCALE SW : 0.2dB
	LINE and AUX
	MONITOR MODE: INPUT
MCK-1 board	TAPE SPEED : HI
	Fs MODE : 48k
DAD-1 board	EMP ON/OFF : OFF
	AIN/DIN : AIN

Adjustment locations

- RV101, 103
- RV201, 203

Adjustment procedure

1. AUX output level adjustment

Input a 1kHz, +4dBs signal to the LINE input. Insert the jumper sockets of the AUX CH1 (CH2) block on the ARP-1 board into the J101, J103 and J201 jumper pins. In other words, make the line input AD/DA signals the AUX input. Read out the AUX OUT output level with the audio level meter.

Specification: +4dBs \pm 0.1dB

- RV103 (CH1)
- RV203 (CH2)

2. AUX input level adjustment

Input a 1kHz, +4dBs signal to the AUX input. Insert the jumper sockets of the AUX CH1 (CH2) block on the ARP-1 board into the J102, J103, and J202 jumper pins. In other words, use the AUX IN signals as input. Read out the AUX OUT output level with the audio level meter.

Specification: +4dBs \pm 0.1dB

- RV101 (CH1)
- RV201 (CH2)

The next section explains the AUX TRACK record and playback adjustment.

4-1-4. AUX TRACK (CH1, CH2, and TC) Playback Level Adjustment

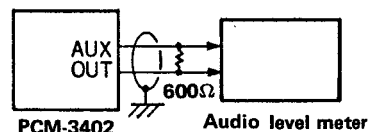
Equipment required

Audio level meter
Oscilloscope

Tape

PCM-3402 alignment tape AR3402-1

Connections



Switch and control settings

Monitor housing	MSAFE SW : ON
	AUX MONITOR MODE: REPRO
MCK-1 board	TAPE SPEED : LO
	Fs MODE : 48k

Adjustment locations

- RV102 (AUX CH1)
- RV202 (AUX CH2)
- RV1 (TC)

Adjustment procedure

1. AUX CH1 and CH2 playback level adjustment

Playback the AUX TRACK REF. LEVEL section of the PCM-3402 alignment tape and read out the AUX output level.

Specification: +4dBs within +0.2/-0.5 dB

- RV102 (CH1)
- RV202 (CH2)

2. AUX TC playback level adjustment

Playback the AUX TRACK REF. LEVEL section of the PCM-3402 alignment tape and read out the level of the output wave at TP2 with the oscilloscope.

Specification: 1.8Vp-p \pm 0.3V

- RV1

4-1-5. Bias Oscillation Circuit Adjustment

Equipment required

Frequency counter
Oscilloscope

Tape

Work tape

Switch and control settings

Monitor housing (MSAFE SW : OFF
ASSEMBLE REC: ON
MCK-1 board (TAPE SPEED : LO
Fs MODE : 48kHz

Adjustment locations

RV2, LV101, LV201

Adjustment procedure

While recording, perform the following adjustment.

1. Bias frequency adjustment

Connect the TP104 or TP204 to the frequency counter and read off the frequency.

Specification: 96kHz±500Hz

RV2

2. Bias amp output level adjustment

Connect the oscilloscope to TP104 (CH1) or TP204 (CH2) and monitor the waveform.
Specification: 95%±5% of peak output

LV101 (CH1)

LV201 (CH2)

4-1-6. AUX CH1 and CH2 recording level adjustment

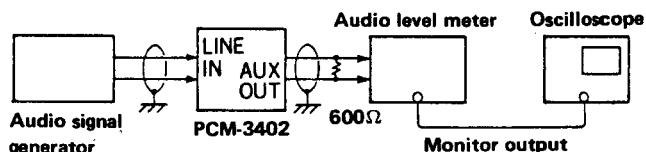
Equipment required

Audio signal generator
Audio level meter
Oscilloscope

Tapes

C1C-DAQ (or a C2D-DAQ recognized as the equivalent of a C1D)

Connections



Switch and control settings

Monitor housing (MSAFE SW : OFF
ASSEMBLE REC : ON
LINE MONITOR MODE: INPUT
MCK-1 board Fs MODE : 48k
J21, J23 jumpers ON (REC ON CONTROL)

Adjustment locations

RV3, 4, 5, 6

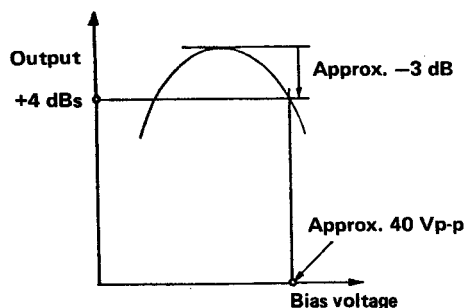
RV104, 204

Adjustment procedure

Input a 1kHz, +4dBs signal to the line input with the signal generator. Set the tape speed to LO (on the MCK-1 board). Set the RV104, RV204, RV3, RV4, RV5 and RV6 to their mechanical centers. Adjust while recording and playing back a C1D-1/4A tape.

1. Rough adjustment of the recording level (Bias level adjustment)

Record while turning RV4 (CH1) and RV6 (CH2) and monitor TP104 and TP204 with the oscilloscope. Adjust so that the AUX output level in the playback mode is about +4dBs. However, the bias level must be greater.



2. DC erase offset cancellation adjustment (Distortion adjustment)

Record and playback over and over, and measure the distortion ratio of the AUX output by monitoring the DC level of TP104 and TP204 in STOP mode with oscilloscope.

Specification: 3% or less

RV104 (CH1)

RV204 (CH2)

3. Recording level fine adjustment

Here, monitor the AUX output the same way as in step 1, and adjust the controls listed below at low and high tape speeds.

Specification: $+4\text{dBs} \pm 0.3\text{dB}$

RV4 (LO: CH1)	} Low Speed
RV6 (LO: CH2)	
RV3 (HI: CH1)	} High Speed
RV5 (HI: CH2)	

4-1-7. AUX CH1 and CH2 Recording and Playback Characteristics Check

Equipment required

Audio signal generator

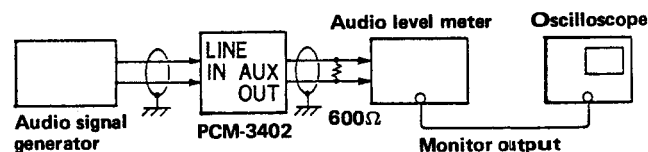
Audio level meter

Oscilloscope

Tape

C1C-DAQ (or a C2D-DAQ recognized as the equivalent of a C1C)

Connections



Switch and control settings

Monitor housing	MSAFE SW	: OFF
	ASSEMBLE REC	: ON
	LINE MONITOR MODE	: INPUT

MCK-1 board Fs MODE : 48k

J21, J23 jumpers ON (REC ON CONTROL)

Adjustment procedure

1. AUX CH1 and CH2 recording and playback frequency characteristics

Output levels of 100Hz and 10kHz, using a 1kHz, +4dBs signal as a reference at low and high tape speeds

Specification: within $\pm 4\text{dB}$

2. AUX CH1 and CH2 recording and playback distortion ratio

At low and high tape speeds

Specifications: 4% or less and within $\pm 1\text{dB}$

3. S/N ratio

Using a 1kHz, +4dBs signal as a reference at low and high tape speeds

Specification: 35dB or less

4-1-8. AUX TRACK TC Recording Adjustment

Since the TC recording current level is fixed, this section explains how to perform the DC erase offset cancellation adjustment.

Equipment required

Oscilloscope

Tape

C1C-DAQ, C2D-DAQ, or other ordinary tape

Switch and control settings

Monitor housing (MSAFE SW : OFF
ASSEMBLE REC: ON
MCK-1 board (TAPE SPEED : LO
Fs MODE : 44.056k

Adjustment locations

RV9

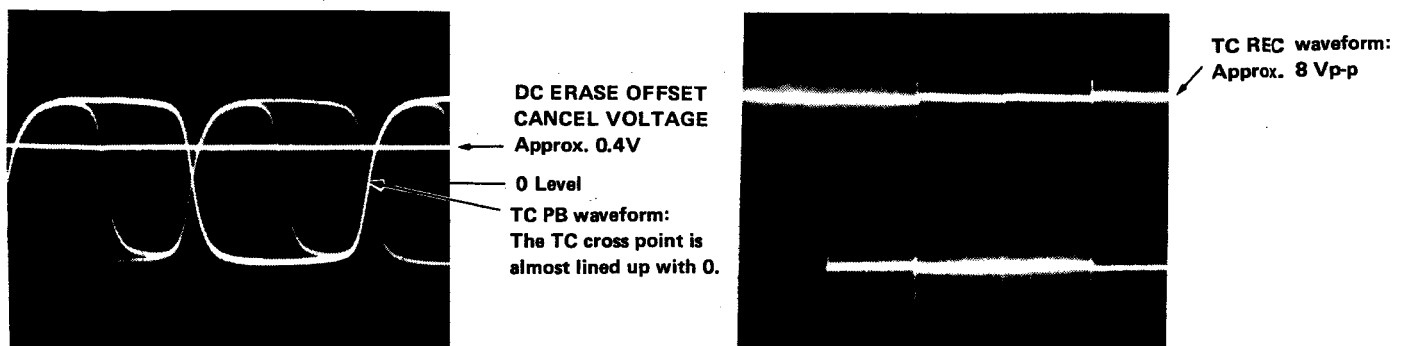
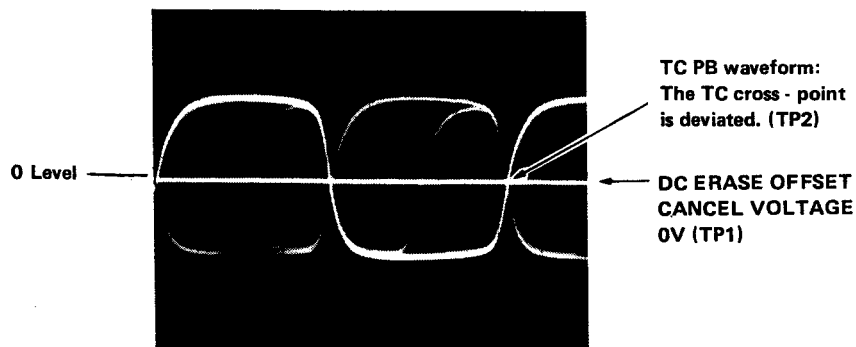
Adjustment procedure

Connect the oscilloscope to TP1 (TC recording waveform) and TP2 (TC playback waveform).

1) Turn RV9 so that the DC level at TP1 is 0V in STOP mode.

2) Perform self-recording and playback, and turning RV9, add the inverted DC level in REC mode to cancel the deviation from the zero-cross point of the time code waveform.

Specification: within $\pm 0.3V$ of the zero-cross point



4-2. DAD-1 BOARD ADJUSTMENT AND CHECK

Before adjusting the DAD-1 board, always make sure that the ARP-1 board is properly adjusted.

4-2-1. A/D Converter Offset Adjustment

Switch on the power and leave it on for 5 minutes to allow the system to warm up.

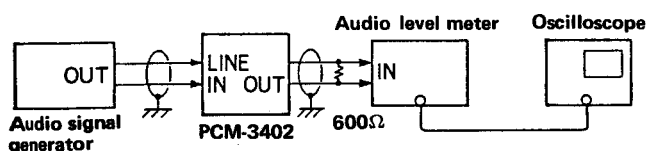
Equipment required

Audio signal generator

Audio level meter

Oscilloscope

Connections



Switch and control settings

Monitor housing	SCALE SW	: NORMAL
	LINE MONITOR MODE	: INPUT
MCK-1 board	TAPE SPEED	: HI
DAD-1 board	EMP ON/OFF	: OFF
	AIN/DIN	: AIN

Adjustment locations

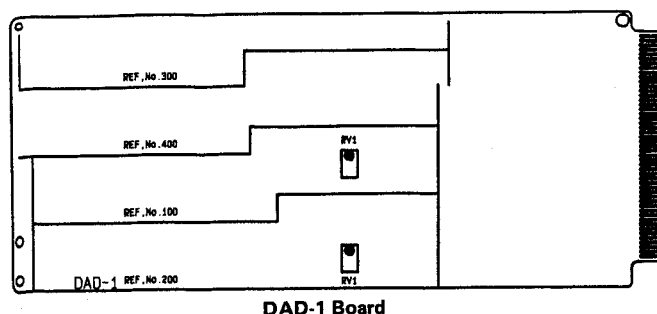
RV101

RV201

Adjustment procedure

Preparations

- 1 MCK-1 board Fs: 48kHz
- 2 DAD-1 board Set the A/D and D/A digital offset rotary switches to A.



1) Rough adjustment

Apply a 1kHz, -76dB (-52dBs) signal to the line input.

Specification:

-57.8dB > -60dB display range > -70.3dB

Adjust so that the -60dB position on the digital level meter turns off and also check that the line output level is -76dB (-52dBs) ± 2 dB.

RV101 (CH1)

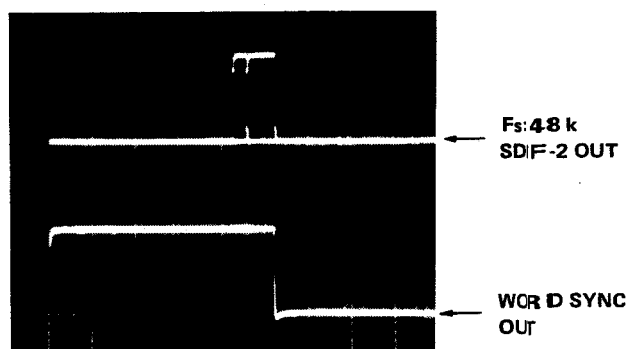
RV201 (CH2)

Set the Digital I/O format selector of DIO board to SDIF and monitor the SDIF-2 (CH1 and CH2) OUT and WORD SYNC OUT with the oscilloscope.

Specification: Adjust so that the amplitude of the data is 2 bits or less as shown in the waveform below.

RV101 (CH1)

RV201 (CH2)



2) Fine adjustment

Switch off the LINE input signal.

Switching the modes of the Fs selector and SPEED selector on the MCK board, adjust RV101 and RV201 to obtain the following specification.

Specification: The noise level must be no greater than -89dB (-65dBs) and the waveform must be like white noise.

RV101 (CH1)

RV201 (CH2)

4-2-2. DAD-1 Board Characteristics Check

1. Noise level check

EMP ON

With input off in all the Fs and SPEED modes,

Specification:

+24(dBs) - noise level(dBs) > 90dB

2. Distortion ratio check

EMP OFF

(100Hz, 1kHz, 10kHz) +4dBs,

(100Hz, 1kHz, 10kHz) +24dBs

EMP ON

(100Hz, 1kHz, 10kHz) +4dBs

Specification: 0.5% or less

3. Frequency characteristic check

EMP On and Off

Using a 1kHz and +4dBs signal as reference, check 20Hz, 100Hz, 10kHz, 15kHz and 20kHz output levels.

Specification: Level = within $\begin{matrix} +0.5\text{dB} \\ -1.0 \end{matrix}$

4-3. REC-1 BOARD ADJUSTMENT

This section explains how to adjust the recording current for recording digital audio data in 12 tracks with the 2 recording heads.

4-3-1. Digital Recording Current Offset Adjustment

Equipment required

REC current adjustment filter

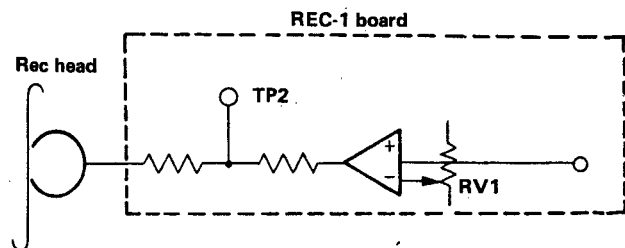
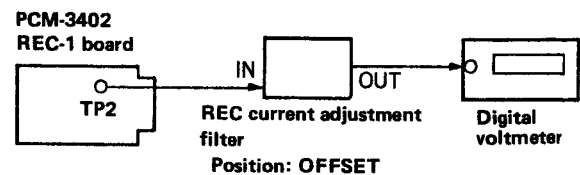
(J-6222-020-A)

Digital voltmeter

Tape

Work tape

Connections



Switch and control settings

Monitor housing ASSEMBLE REC : ON

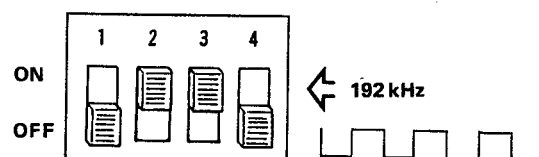
MCK-1 board

TAPE SPEED	: HIGH
Fs MODE	: 48k

REC-1 board

TEST/NORM	: TEST
SW1	: See the figure below.

SW1



(When SW1 is set as shown in the figure above, a 192kHz square wave is generated.)

Adjustment procedure

1. Connect REC Current Adj. jig (J-6222-020-A) and Digital Voltmeter to REC-1 board TP-2 using extension board.

2. Adjustment procedure

Set SW1 as shown in the figure to generate a 192kHz square wave, then adjust RV1 for each track while recording the square wave. Adjust RV1 so that the reading on the digital voltmeter meets the following specification.

Specification: $0 \pm 5\text{mV DC}$

Adjustment location

→ RV1 for each track

Adjustment location

○RV1 for each track

4-3-2. Digital Recording Current Level Adjustment

Equipment required

AC voltmeter

- (HP-334 DISTORTION METER
- MN-44513 NOISE METER (MEGURO)
- HP-3400 AC Voltmeter

Digital monitor head jig (J-6105-730-A)

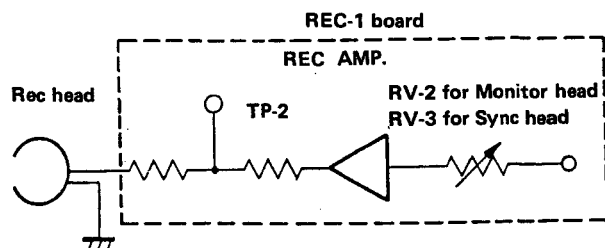
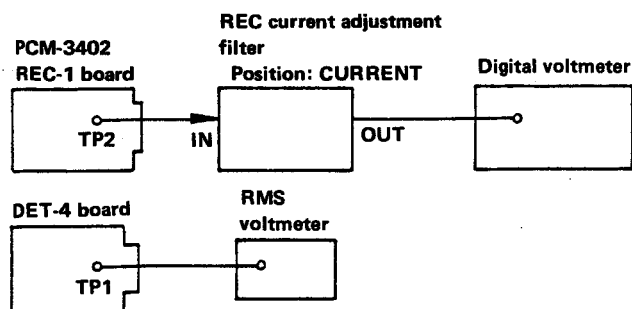
REC current adjustment jig (J-6222-020-A)

Digital voltmeter

Tape

CLC-DAQ (with data)

Connections

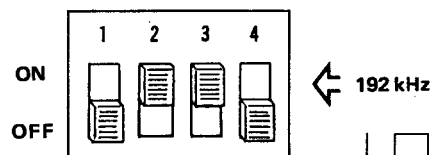


Besides the connections shown in the drawing above, connect the harness that is connected to CN304 on the PA-57 board, to the monitor PB head.

Switch and control settings

Monitor housing	ASSEMBLE REC	: ON
MCK-1 board	(TAPE SPEED	: HIGH
	(Fs MODE	: 48k
REC-1 board	(TEST/NORM	: TEST
	SW1	: See the figure below.

SW1



MON REC HEAD

Adjustment procedure

1. Connect AC voltage meter to TP-1 on DET-4 board.
2. Connect REC Current Adj. jig (J-6222-020-A) and Digital Voltmeter to REC-1 board TP-2 using extension board and switch to current mode.

Switch settings

Monitor housing: Monitor Rec
REC MODE : MONITOR
ASSEMBLE REC : ON

3. Measure "Vb" while in record.

Turn RV2 on REC-1 board and read off the peak playback level. Next, turn RV2 back counter-clockwise so that playback level becomes -0.3dB comparing the peak level.

Then measure Head Drive Voltage ("Vb") by digital voltmeter.

4. Measure "Va" while in record.

Turn RV2 slowly clockwise and confirm the peak playback level.

Turn clockwise again so that playback level becomes -0.3dB comparing the peak level. Then measure Head Drive Voltage ("Va") by digital voltmeter.

Note: Perform 4 and 5 three times.

5. Calculate V'nr of monitor rec head by using equation:

$$V'nr = \frac{Va + Vb}{2}$$

6. Calculate V mean of monitor rec head by using equation:

$$V \text{ mean} = \frac{V'nr1 + V'nr2 + V'nr3}{3}$$

7. Calculate V'nr of monitor rec head by using equation:

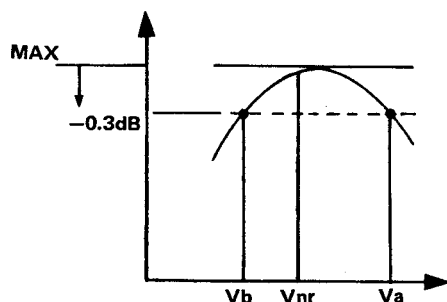
$$Vnr = 0.95 \times V \text{ mean} / kt$$

Va: -0.3dB below peak of playback level at upper side of peak current.

Vb: -0.3dB below peak of playback level at lower side of peak current.

Vnr: Adjustment MONITOR REC HEAD drive voltage.

kt: Coefficient of current calibration of "ClC-DAQ" reference tape.



8. Measure CTL Track Va, Vb using 4, 5 and 6.

Note: Perform this procedure one time.

9. Calculate Vctl using equation:

$$Vctl = 1.1 \times (0.95 \times V'nr) / kt$$

Vctl: Head drive voltage for CTL record current

Adjustment location

- ①RV2 for each track

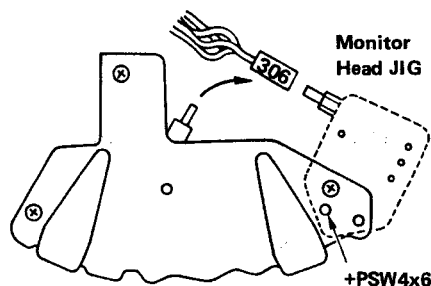
The coefficient kt tape is indicated on each ClC-DAQ. Be sure to use this kt when calculating Vnr.

SYNC-REC HEAD

Adjustment procedure

1. Install the monitor head jig.

Install the monitor head jig by PSW4x6 screw (See the figure below.) and connect CN306 connector from PA-57 to monitor head jig.

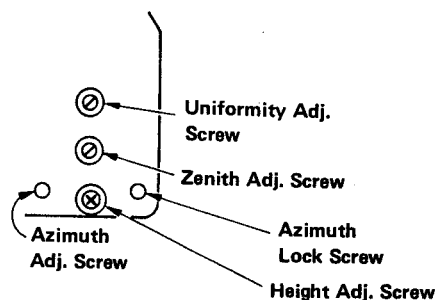


2. Uniformity adjustment

Probe TP1 on the track 2C of DET-4 board and playback pre-recorded alignment tape (AR3402-1) at digital playback height section. Turn the uniformity adj. screw to get maximum level (See the figure below.).

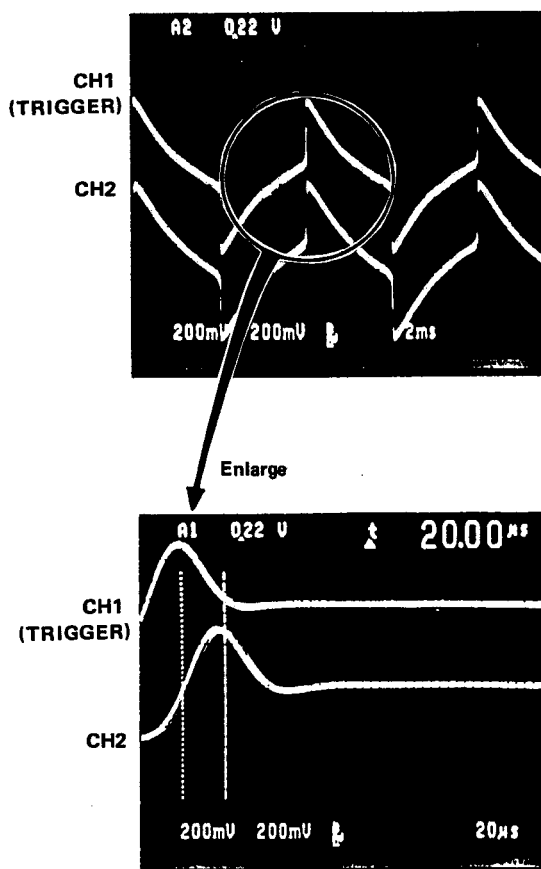
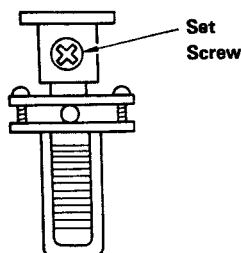
3. Height

Probe TP1 on the track 2C of DET-4 board. Playback pre-recorded alignment tape (AR3402-1) at digital playback height section and turn height adj. screw for peak level.



4. Azimuth adjustment

- . Probe TP1 on the tracks 2D and 1A.
- . Playback pre-recorded alignment tape (AR3402-1) at digital playback Azimuth section.
- . Loosen the Azimuth lock screw less than 1 rotation.
- . Adjust the Azimuth adj. screw so the phase of track 1A & 2D are in phase.
- . Turn the Azimuth adj. screw clockwise so the phase distance between (1A-2D) becomes 20µsec.
- . Fasten the Azimuth lock screw. The phase of 1A and 2D should be 0µsec. spec. 0±10µsec.



5. Height precise adjustment

Same as 3.

6. Confirmation of uniformity

- . Probe TP1 on the track 2C of DET-4 board.
- . Playback alignment tape (AR3402-1) at digital playback height section pre-recorded.
- . Gently touch the bottom and top of the tape before and after the monitor head jig. Confirm TP1 signal has not increased in amplitude.

7. Connect AC voltage meter to TP1 on DET-4 board.

8. Connect REC Current Adj. jig (J-6222-020-A) and Digital Voltmeter to REC-1 board TP2 using extension board and switch to current mode.

Switch settings

Monitor housing: SYNC REC

REC MODE : SYNC

ASSEMBLE REC : ON

9. Measure "Vb" while in record.

Turn RV3 on REC-1 board and read off the peak playback level. Next turn RV3 back counter-clockwise so that playback level becomes -0.3dB comparing the peak level. Then measure Head Drive Voltage ("Vb") by digital voltmeter.

10. Measure "Va" while in record.

Turn RV3 slowly clockwise and confirm the peak playback level. Turn clockwise again so that playback level becomes -0.3dB comparing the peak level. Then measure Head Drive Voltage ("Va") by digital voltmeter.

Note: Perform 4 and 5 three times for accurate measurement.

11. Calculate V'nr of sync rec head by using equation:

$$V'nr = \frac{Va + Vb}{2}$$

12. Calculate V mean of sync rec head by using equation:

$$V \text{ mean} = \frac{V'nr1 + V'nr2 + V'nr3}{3}$$

17. Perform 7 to 17 for all track, including CTL track.

Each ClC-DAQ tape has its own coefficient kt. Be sure to use this kt when calculating Vnr.

Specification: The difference between the playback levels for both D/M REC and D/S REC heads must be no greater than 0.5dB.

DET-4 Board

REC-1 Board

4-4. PA-57 AND DET-4 BOARDS ADJUSTMENT

This section explains how to adjust the digital playback system for the digital audio data.

Equipment required

CRC error meter (J-6220-210-A)

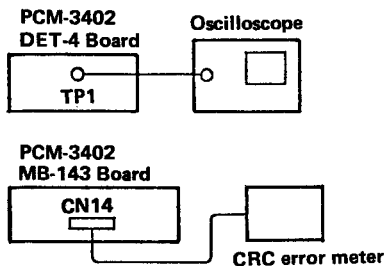
Oscilloscope

Tapes

C1C-DAQ or C2D-1/4A

PCM-3402 alignment tape AR3402-1

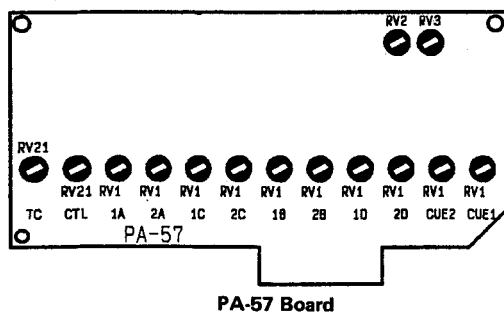
Connections



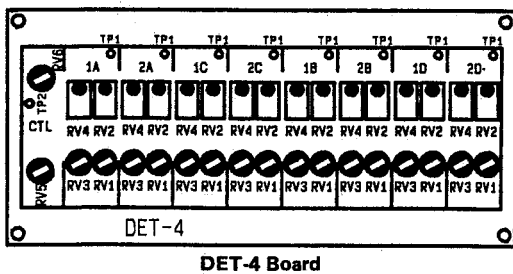
Switch and control settings

REC-1 board (TEST/NORM : NORM)

ARP-1 board (1kHz OSC SW: ON)



PA-57 Board



DET-4 Board

4-4-1. Digital Playback System Rough Adjustment

Play back the data track playback adjustment section of the alignment tape. Adjust the adjustment locations listed below so that the waveforms on the oscilloscope look like those shown in the figures below.

1. HIGH SPEED

Switch settings MCK-1: SPEED/HIGH
Fs : 48kHz

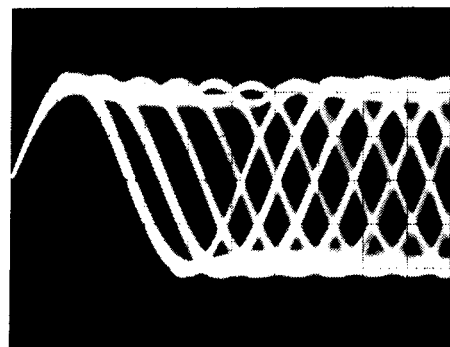
- (1) Play back the "CTL and data track pre-adjustment" section of the Pre-recorded alignment tape (AR3402-1).
- (2) . Connect DVM to TP2
Adjust RV2 for about 8VDC
- (3) Probe TP1 on the track 1A of DET-4 board.
 - . Adjust RV1 on the track 1A of PA-57 board so that the jitter at the cross-point is minimum.
 - . Adjust RV3 on the track 1A of DET-4 board so that the jitter at the cross-point is minimum.
 - . Adjust RV4 on the track 1A of DET-4 board so that the offset at the cross-point is minimum (See the figure below.).
 - . Repeat above for all digital tracks.

(4) Adjustment location

PA-57 ○RV2 and Track 1A RV1, 201, 301, 401, 501, 601, 701, 801, 901, 1001, 1101, 1201

DET-4 ○Track 1A RV3, 203, 303, 403, 503, 603, 703, 803

○RV104, 204, 304, 404, 504, 604, 704



HIGH SPEED
Fs:48 kHz

2. LOW SPEED

(Switch settings MCK-1: SPEED/LOW)
Fs : 48kHz

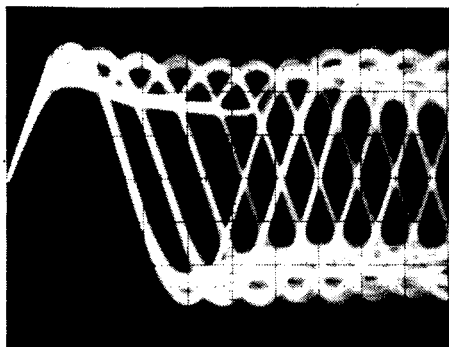
- (1) Play back the "CTL and data track pre-adjustment" section of the pre-recorded alignment tape (AR3402-1).
- (2) Connect DVM to TP2 on PA-57 board.
Adjust RV3 for about 1.4VDC.
- (3) Probe TP1 on DET-4 board.
 - . Adjust RV1 on the track 1A of the DET-4 board so that the jitter at the cross-point is minimum.
 - . Adjust RV2 on the track 1A of DET-4 board so that the offset at the cross-point is minimum (See the figure below.).
 - . Perform above procedure for all digital tracks.

(4) Adjustment location

PA-57 ⓪RV3

DET-4 ⓪Track 1A RV1, 201, 301, 401,
501, 601, 701, 801

⓪Track 1A RV2, 202, 302, 402,
502, 602, 702, 802



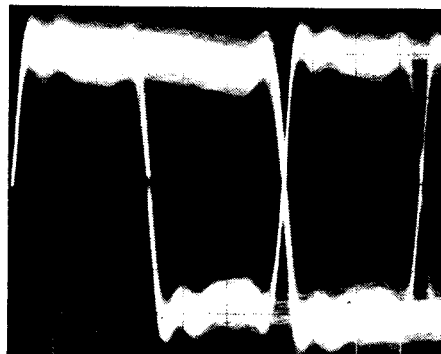
LOW SPEED
Fs: 48 kHz

4-4-2. CTL Track Playback Adjustment

Set the SPEED setting on the MCK-1 board to HI (Fs of 48kHz). While recording and playing back, there should be no distortion at the top and bottom of the waveform. See the figure below.

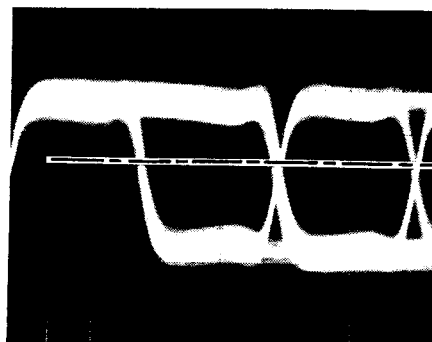
Adjust RV21 on PA-57 board for max. amp. without ringing.

PA-57 Board ⓪RV1



Adjust RV5 on DET-4 board for min. ringing. Top and bottom of the waveform should be flat shown in photograph.

DET-4 Board ⓪RV5

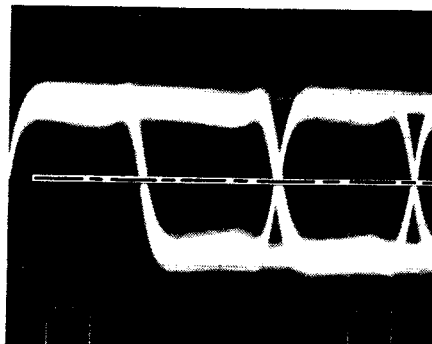


Switch



Set the oscilloscope to the AC coupling, and line up the click points and the cross points.

DET-4 Board ⓪RV6



Switch

4-4-3. Digital Data Track Playback-system Fine Adjustment

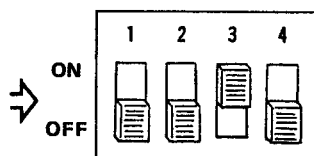
Load a ClC-DAQ tape or a C2D-1/4A tape.

(1) Switch and control settings

MCK-1 Board Fs mode: 48kHz

Test switch : S8 DIP switch

Note: After the adjustment, always restore the test switch to its original position. (This allows $\pm 30\%$ Vari-speed.)



(2) TAPE SPEED: HIGH

Perform monitor recording on ClC-DAQ or C2D-1/4A. Perform a sync insert recording to make a self-recorded tape. Make sure the playback overwrite tape recording is longer than the error measurement time. Play back at VARI about $+18\%$. During playback, adjust the location listed below in such a way as to minimize the CRC error on each track read out by the CRC error meter.

1. PA-57 RV2: Adjust \odot RV2 a little to minimize the CRC error.

CRC error meter SW setting:

AUTO/MANUAL : AUTO

COUNT PERIOD: MIN.

2. PA-57 RV1: Adjust \odot RV1 to minimize the CRC error and to minimize the cross-point jitter. CRC error meter SW setting is same as #1.

3. DET-4 RV3: Adjust \odot RV3 to minimize the CRC error and cross-point jitter.

CRC error meter SW setting:

AUTO/MANUAL : AUTO

COUNT PERIOD: SECOND POSITION FROM MIN.

4. DET-4 RV4: Adjust RV4 to minimize the CRC error and cross-point offset.

CRC error meter SW setting:

AUTO/MANUAL : AUTO

COUNT PERIOD: MAX.

5. Repeat steps 2 through 4 to get minimum CRC error.

TARGET: Under level A

(If you cannot reach to level A, that is O.K.)

6. Adjustment location

- ① PA-57 \odot RV2 (High Freq. E. Q.)
- ② PA-57 \odot RV1 (each track)
(Gain & High Freq. E. Q.)
- ③ DET-4 \odot RV3 (each track)
(Phase E. Q.)
- ④ DET-4 \odot RV4 (each track)
(Detect Level)

(3) TAPE SPEED: LOW

Perform monitor recording on ClC-DAQ. Perform a sync insert record to make a self-recorded tape. Make sure the playback overwrite tape is recorded longer than the error measurement time. Play back at VARI about -25% on FS = 44.056kHz. During playback, adjust the location listed below in such a way as to minimize the error rate on each track read out by error meter.

1. PA-57 RV3: Adjust \odot RV3 a little to minimize the CRC error and the cross point jitter.

CRC error meter SW setting:

AUTO/MANUAL : AUTO

COUNT PERIOD: MIN.

2. DET-4 RV1: Adjust \odot RV1 to minimize the CRC error and cross point jitter.

CRC error meter SW setting:

AUTO/MANUAL : AUTO

COUNT PERIOD: SECOND POSITION FROM MIN.

3. DET-4 RV2: Adjust \odot RV2 to minimize the CRC error and cross-point offset.

CRC error meter setting:

AUTO/MANUAL : AUTO

COUNT PERIOD: MAX.

4. Repeat 2 to 3 to get minimum CRC error.

TARGET: Under level A

(If you cannot reach to level A, that is O.K.)

5. Adjustment location

- ① PA-57 \odot RV3 (High Freq. E. Q.)
- ② DET-4 \odot RV1 (Phase E. Q.)
- ③ DET-4 \odot RV2 (Detect Level)

(4) Final error rate checking

1. SW setting Fs: 48kHz

TAPE SPEED: HI & LOW on
MCK board

TEST NORMAL: NORMAL on
REC board

2. HIGH SPEED

Perform initial monitor recording, overwrite in sync insert to make a self-recorded playback tape. The overwrite tape should be recorded longer than the error measurement time. Play back at normal speed and $\pm 12.5\%$ Vari speed.

CRC error meter SW setting:

AUTO/MANUAL : MANUAL

COUNT PERIOD: MAX.

- (A) Push [START] button of CRC error meter.
- (B) When light at the center of [START] button is off, take error count reading.

3. LOW SPEED

Same procedure as high speed except tape speed setting.

Perform the above step (3) on low speed.

4. Check that the LED level of CRC error meter is level B or less.

4-5. TPC-1 BOARD ADJUSTMENT

This section explains how to adjust the digital input/output level, balance control, and shuttle offset.

4-5-1. Digital Input/Output Level and Balance Control Adjustment

Equipment required

Test pattern generator jig

Connections

Insert the test pattern generator jig in place of the DAD-1 board.

Switch and control settings

Monitor housing	DIGITAL LEVEL	
	BALANCE CONTROL	
	SW	: INPUT
	REF MARKER	: -20dB
	SCALE SW	: 0.2dB
	MONITOR SIGNAL SELECT	
		: INPUT

Test pattern generator jig	LEVEL	: -20dB
	CH1, 2 EN	: ON
	FREQUENCY	: 1kHz

Adjustment locations

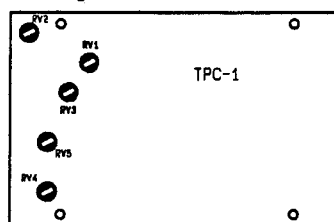
RV3 and 5

Adjustment procedure

Set the Digital audio LEVEL control and Digital audio BALANCE control on the monitor housing to their center positions.

Set the DIGITAL CONTROL selector on the monitor housing to INPUT.

1. Adjust \odot RV5 so that the CH1 level and CH2 level shown on the digital level meter are the same.
2. Adjust \odot RV3 to give a level of -20dB on the digital level meter.



4-5-2. Shuttle Dial Offset Adjustment

Tape

Work tape

Specification:

Internal shuttle mode

When the unit is switched from stop to shuttle mode, the tape must not move.

Adjustment location

RV2

Specification:

External shuttle mode

Connect a 1kHz, rectangular wave TTL-level signal with a 50% duty cycle to Pin No.34 (Shuttle PWM Input) of the 50-pin Parallel-Remote connector. When the unit is switched from stop to shuttle mode, the tape must not move.

Adjustment location

RV1

4-5-3. TPC-1 Board AD Offset Adjustment

Equipment required

Oscilloscope or digital voltmeter

Pin 1 of IC C5 should be +5V.

Adjustment location

RV4

4-6. DR-54 BOARD ADJUSTMENT

4-6-1. Tension Adjustment

See Section 3-5-3 "Tension adjustment".

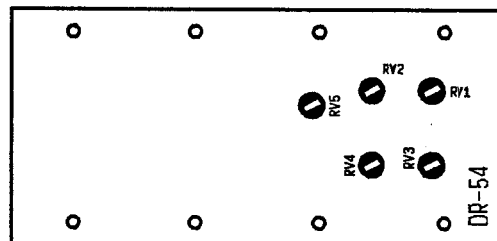
Adjustment location

RV1 and 2

4-6-2. Offset Adjustment

The offset adjustment for the three drive amps has been completed with the manufacturing adjustment tool.

Note: These RV3, 4 and 5 should not be turned in the field service.



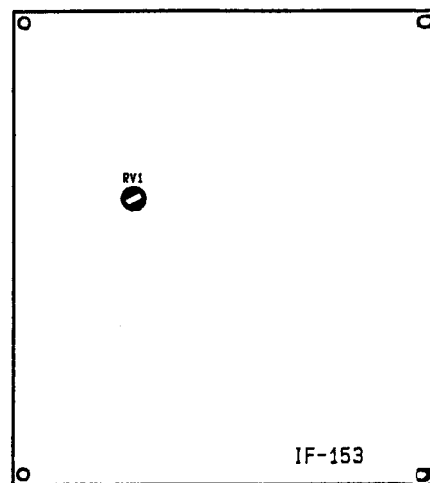
DR-54 Board

4-7. IF-153 BOARD ADJUSTMENT

4-7-1. Time Code Output Level Adjustment

Thread a tape and play back it. Connect a 600 ohms resistor to the balance output and read off the voltage across that resistor with the oscilloscope.

Specification: 2.4Vp-p±0.1V



IF-153 Board

4-8. CTL-1 BOARD ADJUSTMENT

See Section 3-10-2 "CTL board Servo gain and phase adjustment and check".

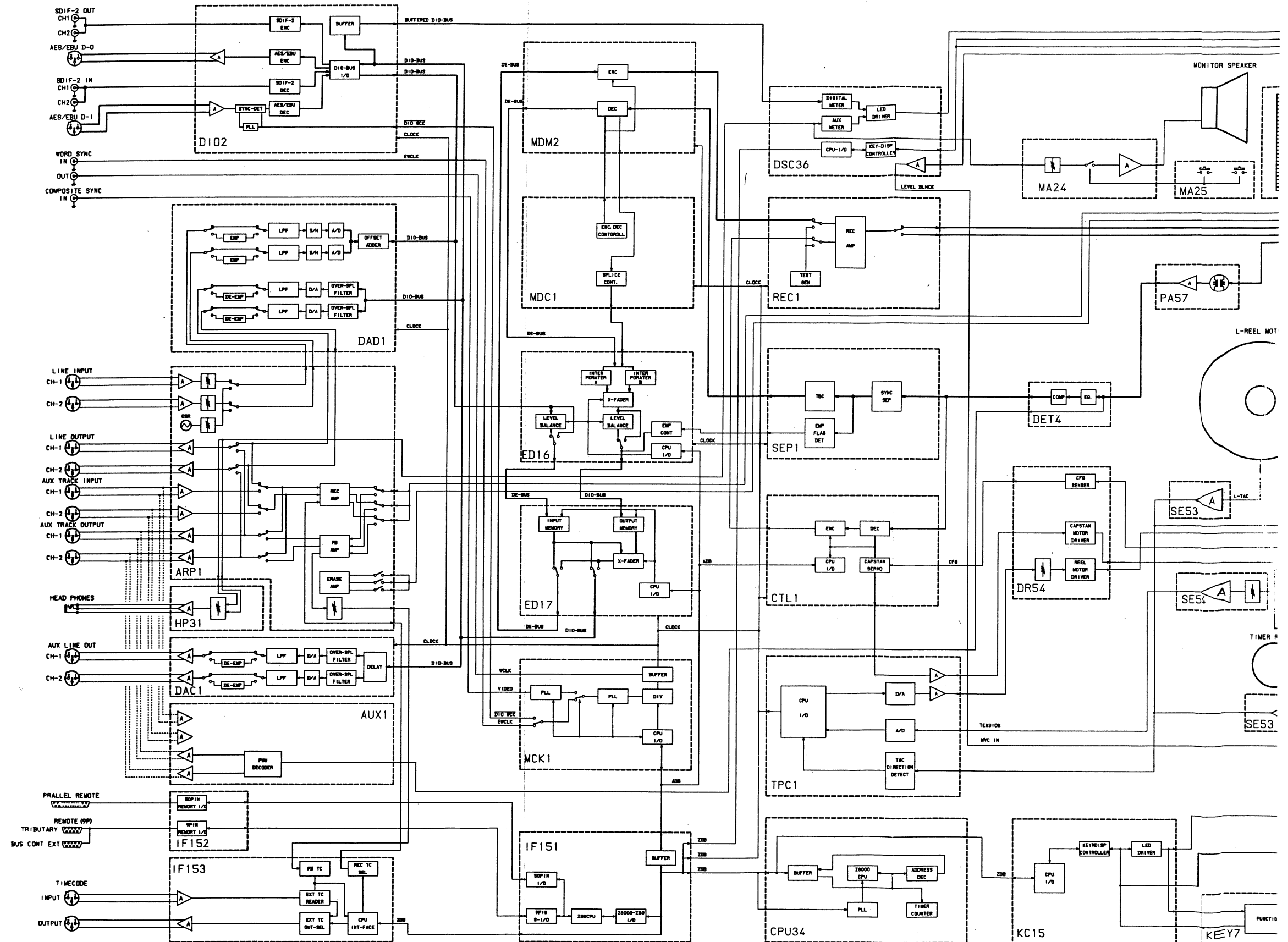
4-9. SE-54 BOARD ADJUSTMENT

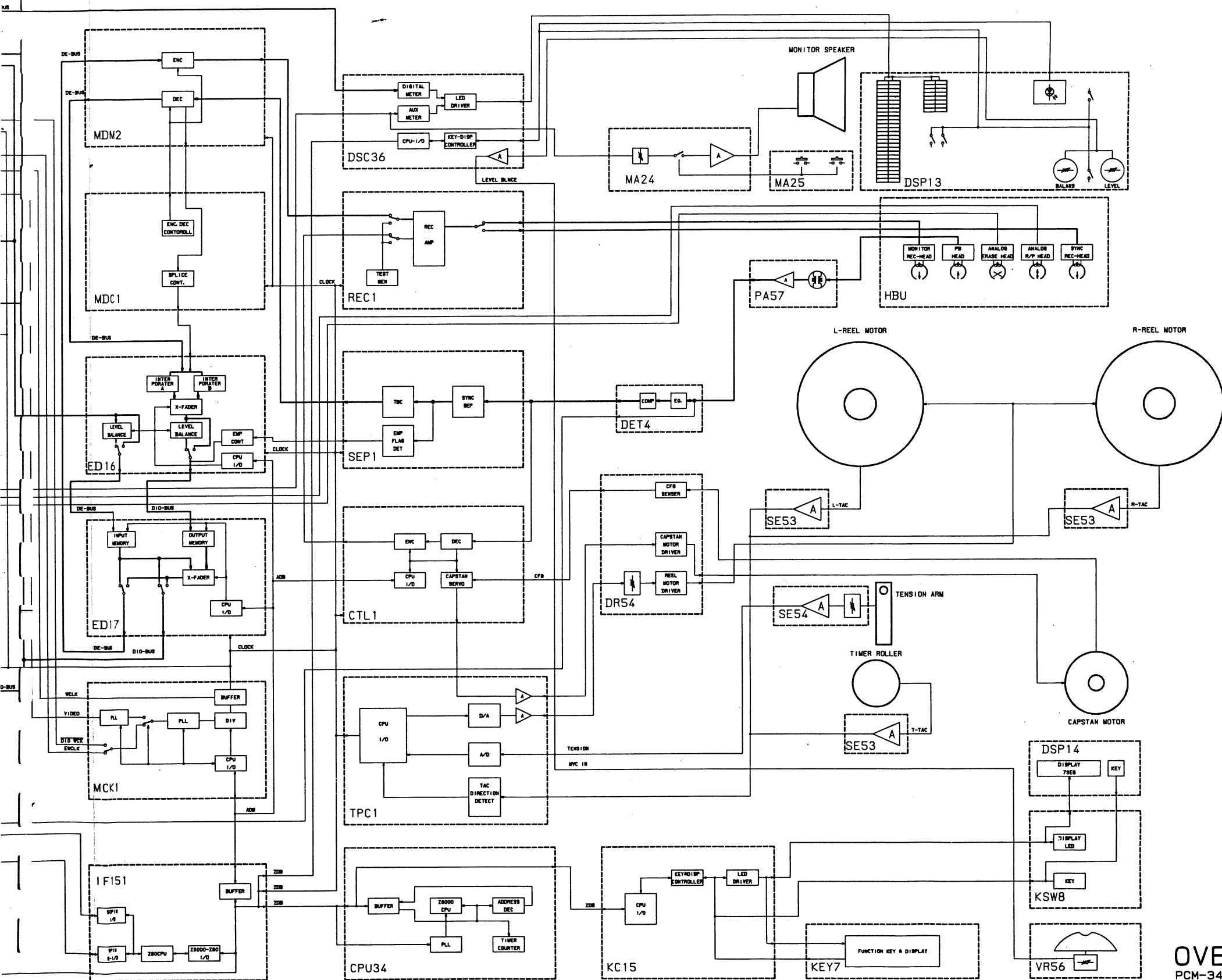
See Section 3-5-2 "Tension arm adjustment".

SECTION A

BLOCK DIAGRAMS

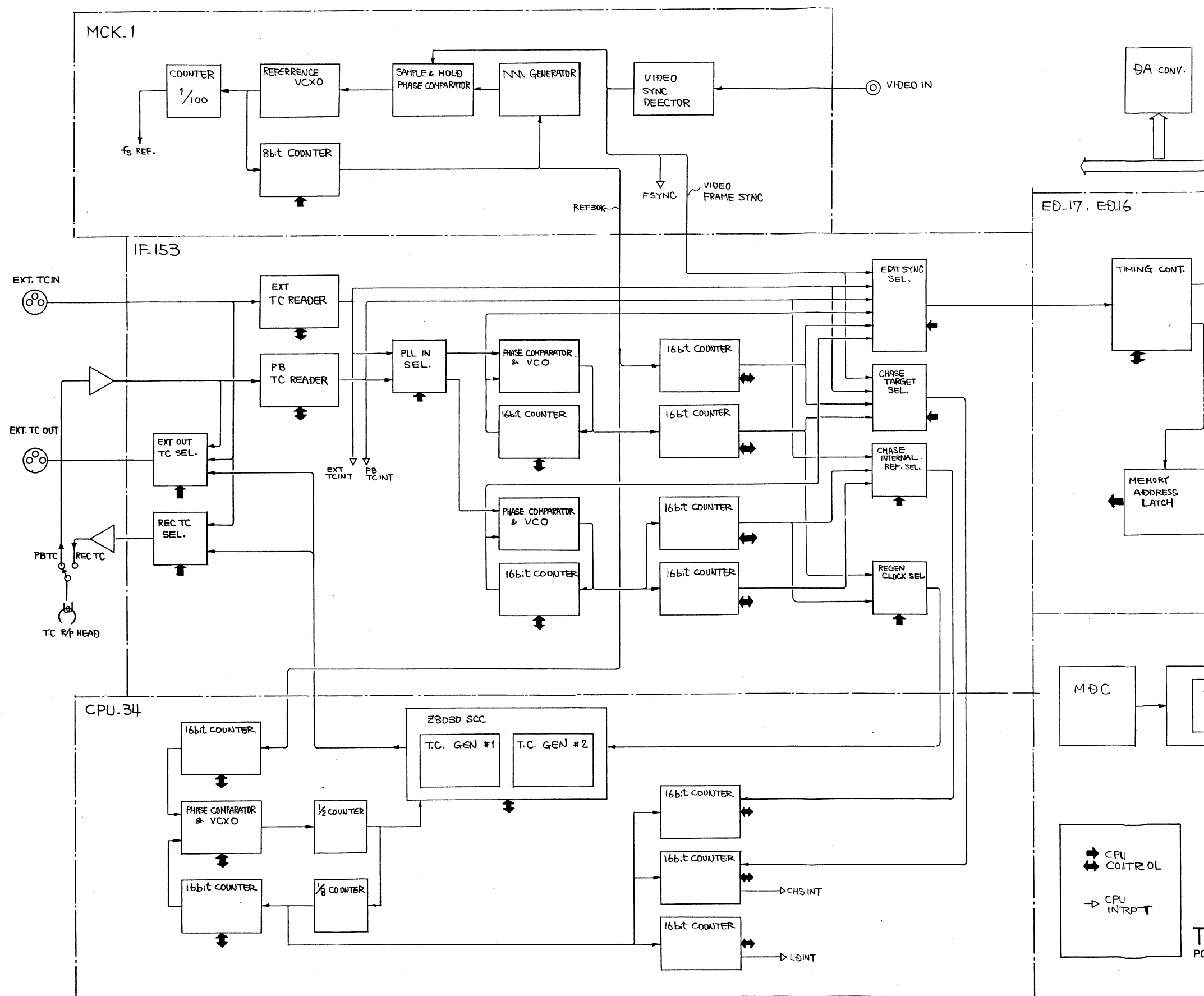
OVERALL BLOCK DIAGRAM

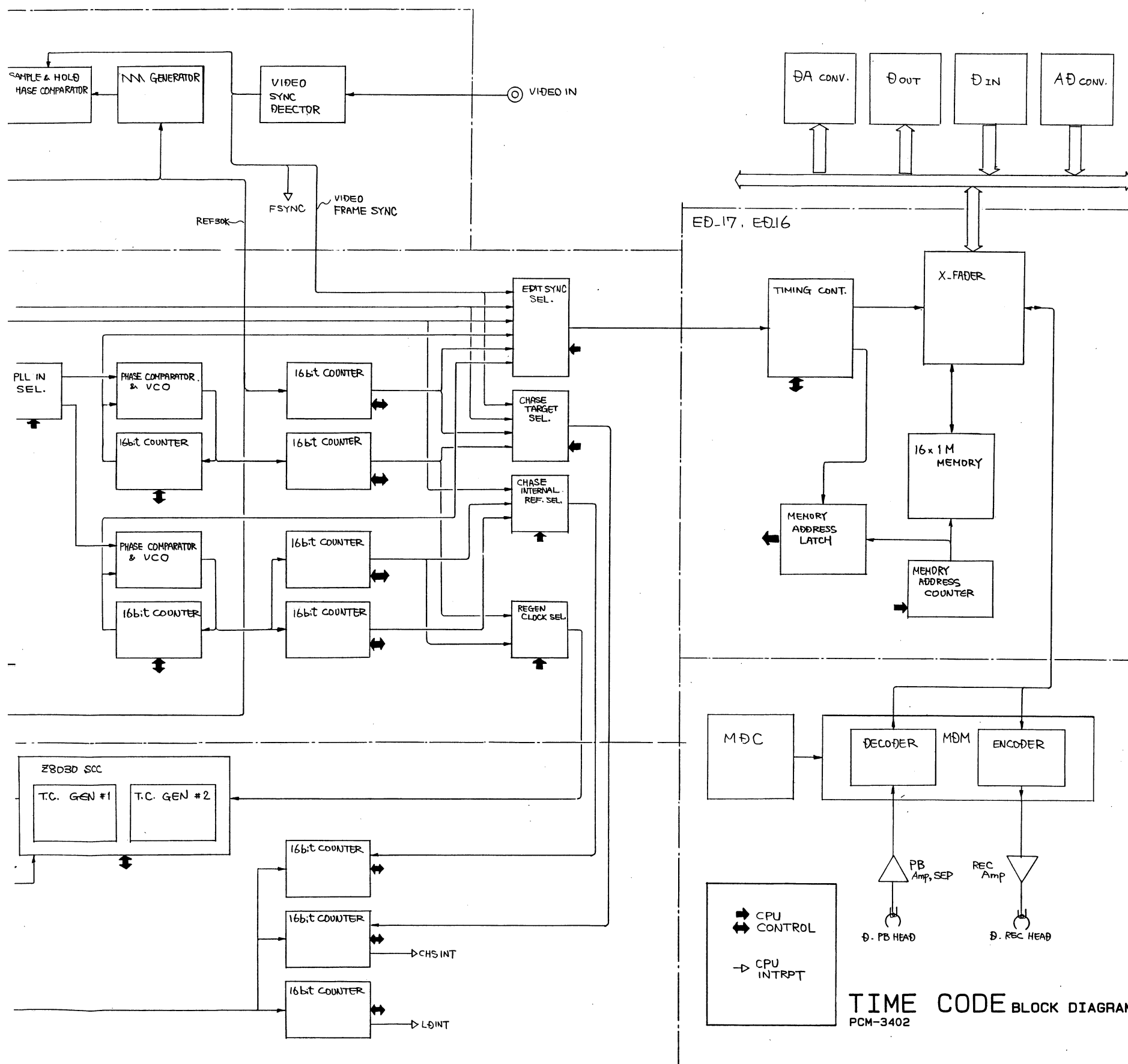




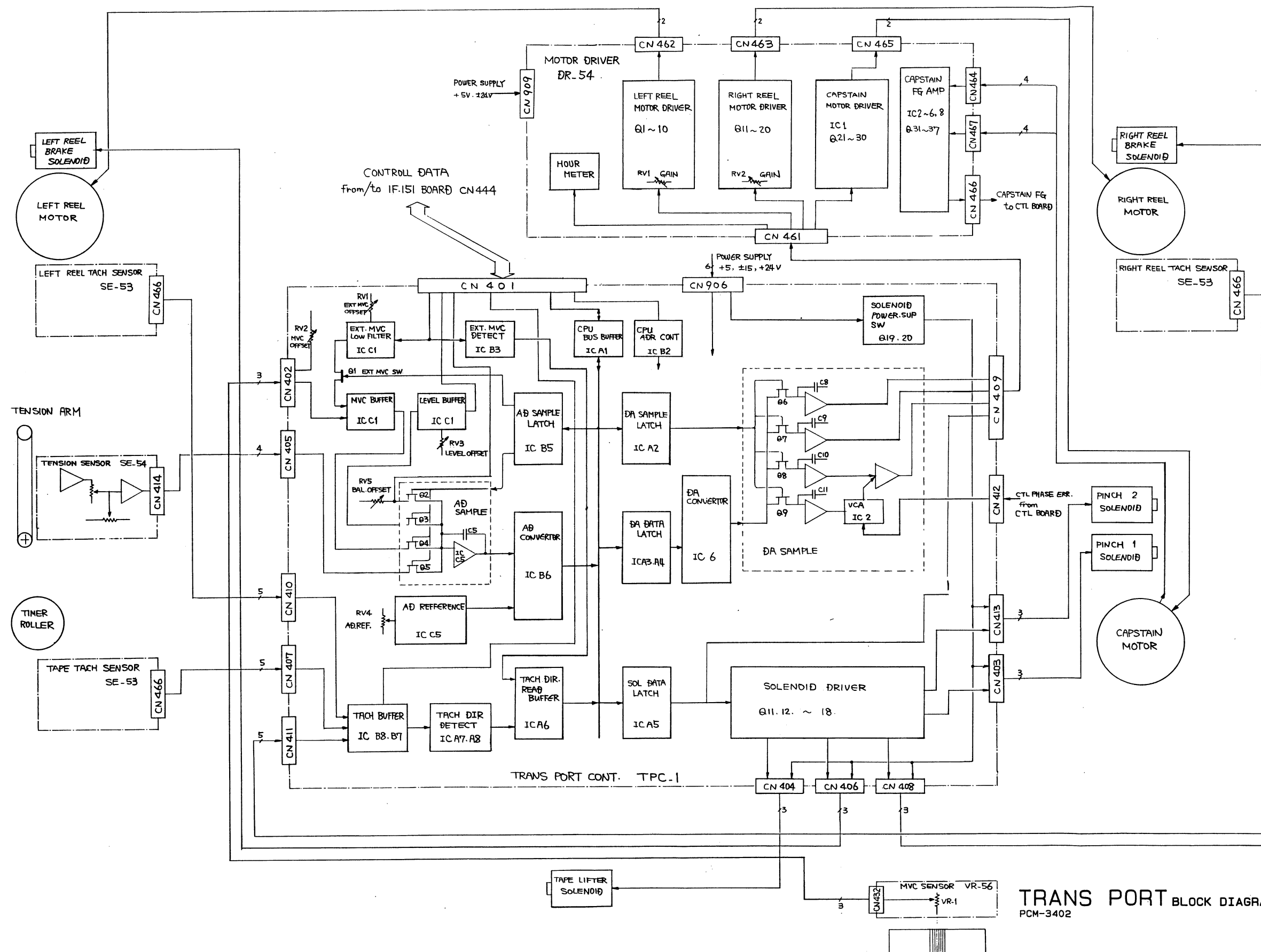
OVERALL BLOCK DIAGRAM
PCM-3402

TIME CODE BLOCK DIAGRAM

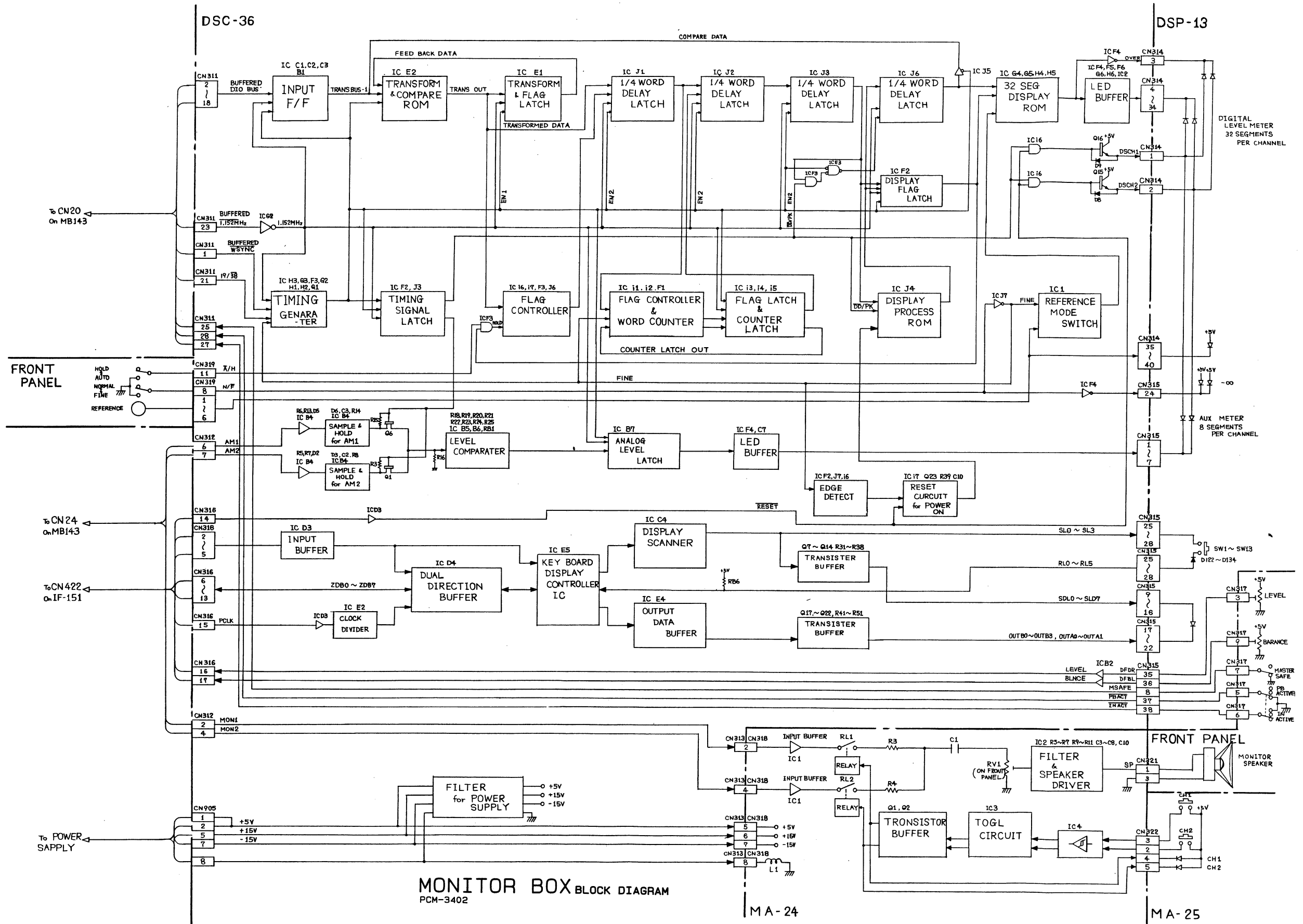




TRANS PORT BLOCK DIAGRAM

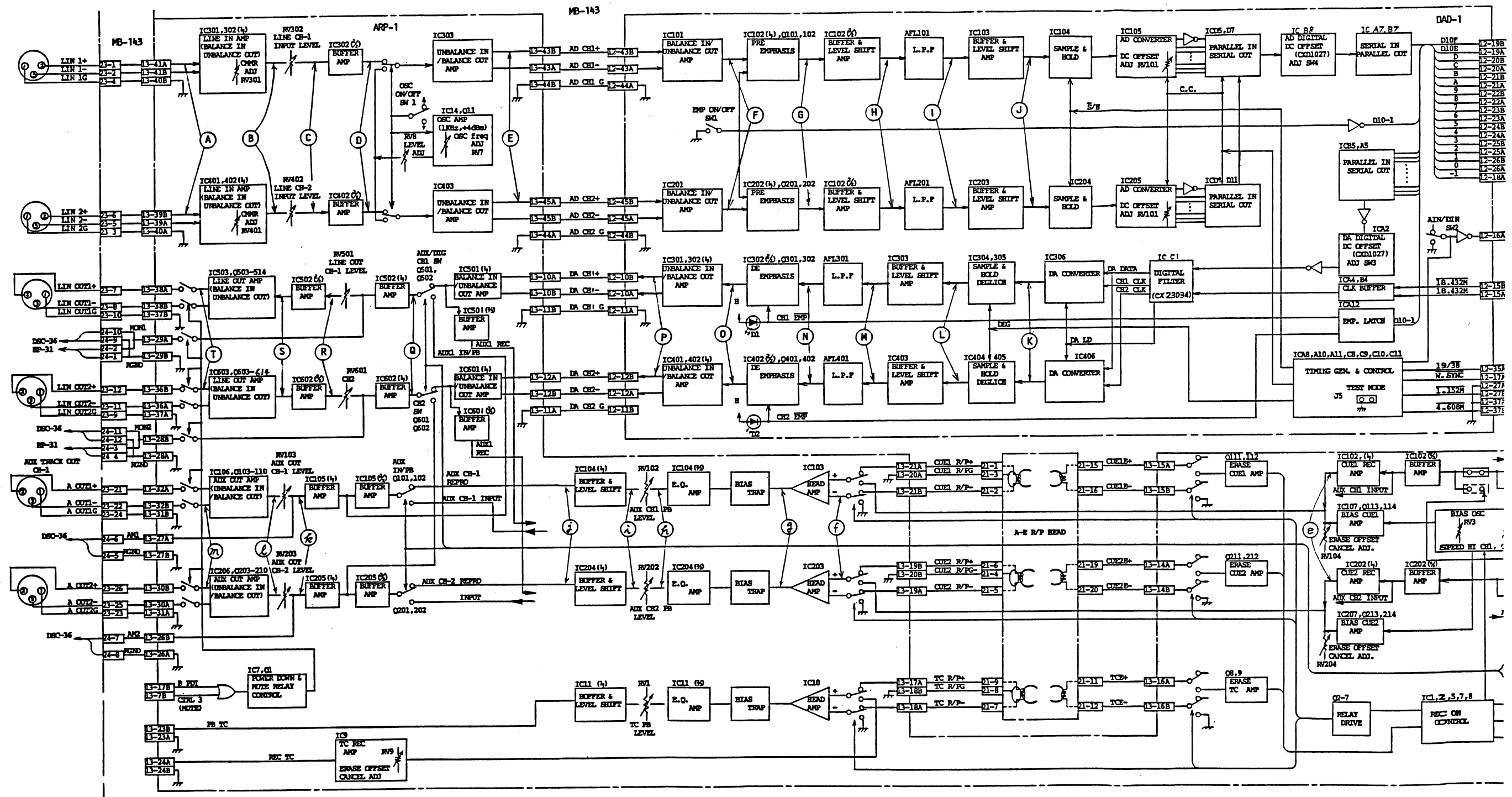
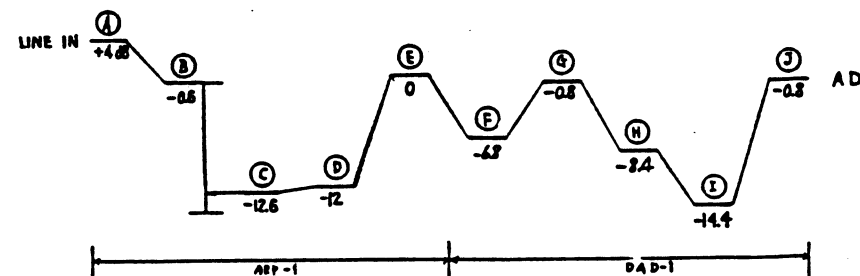


MONITOR BOX BLOCK DIAGRAM

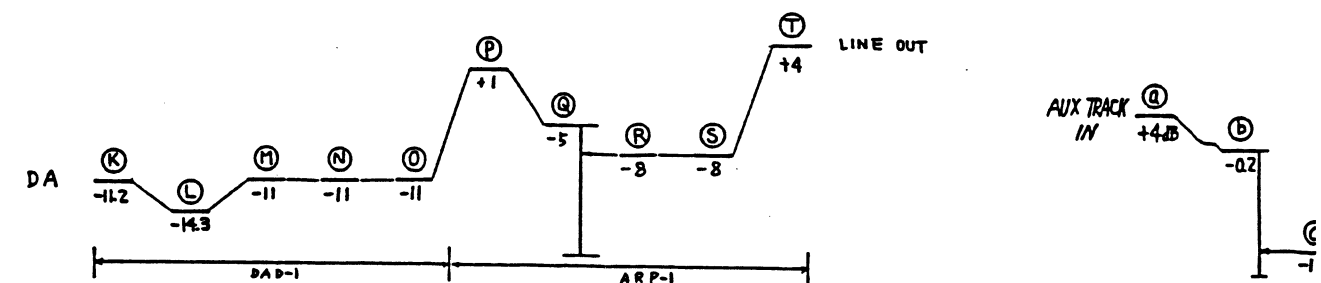


BLOCK DIAGRAM ARP ARP BLOCK DIAGRAM

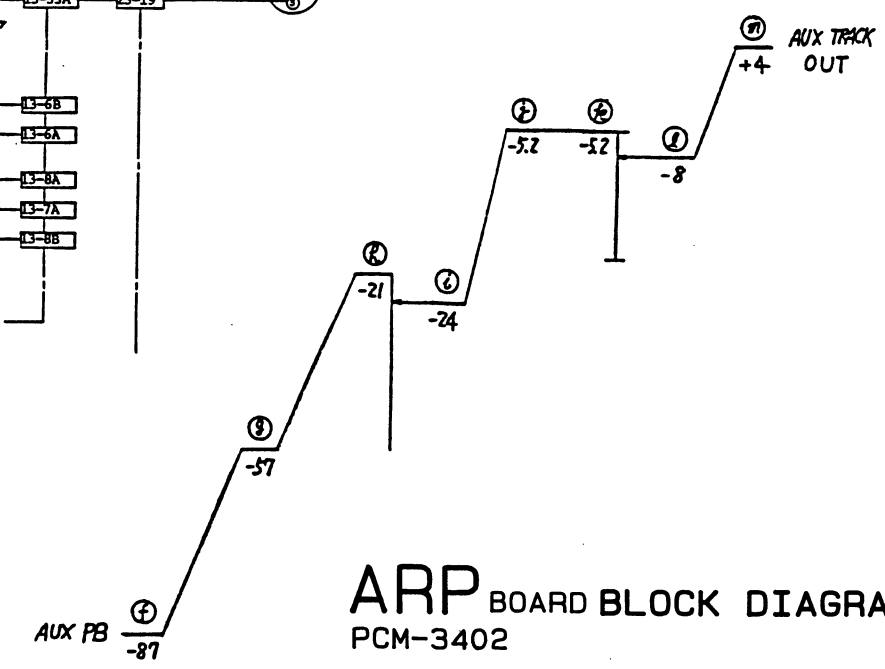
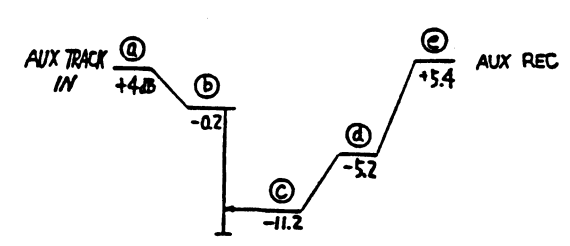
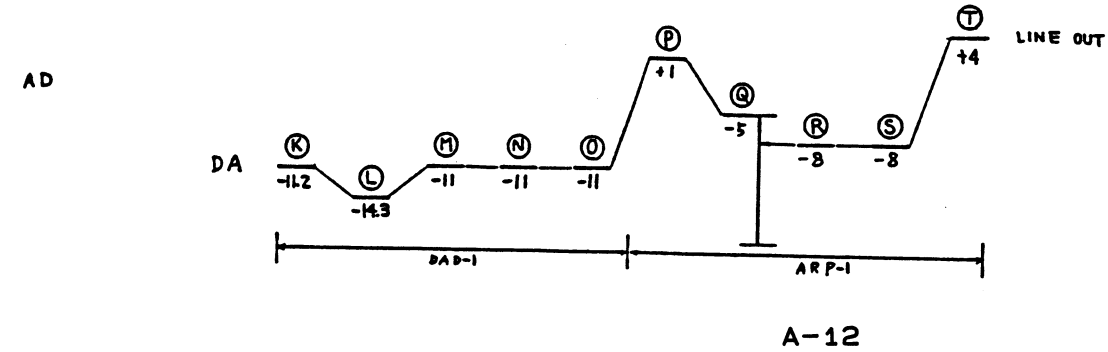
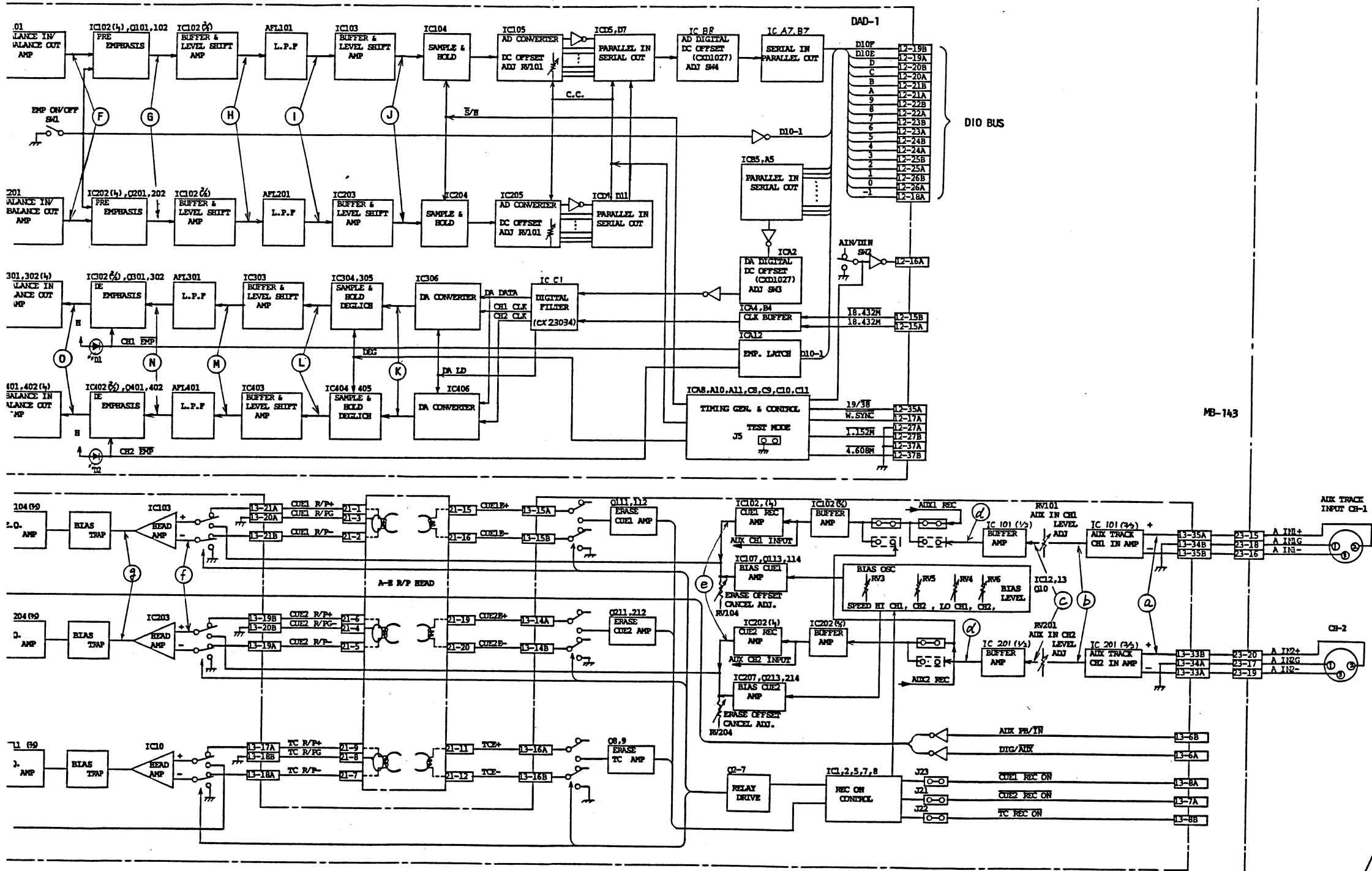
ARP BLOCK DIAGRAM


$$f = 1 \text{ kHz}, 0 \text{ dB} = 0.775 \text{ V}_{\text{rms}}$$


A-11

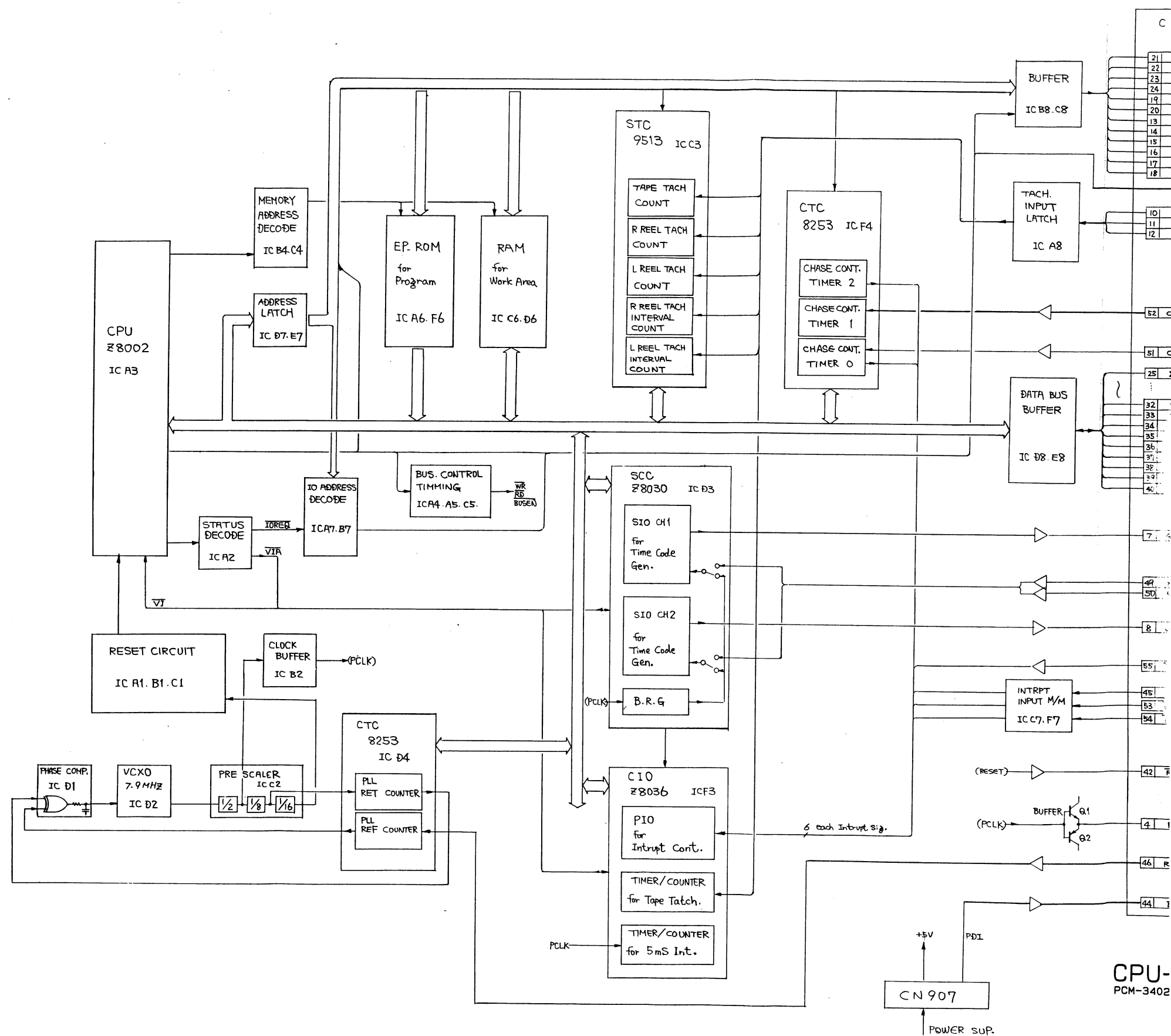


A-12

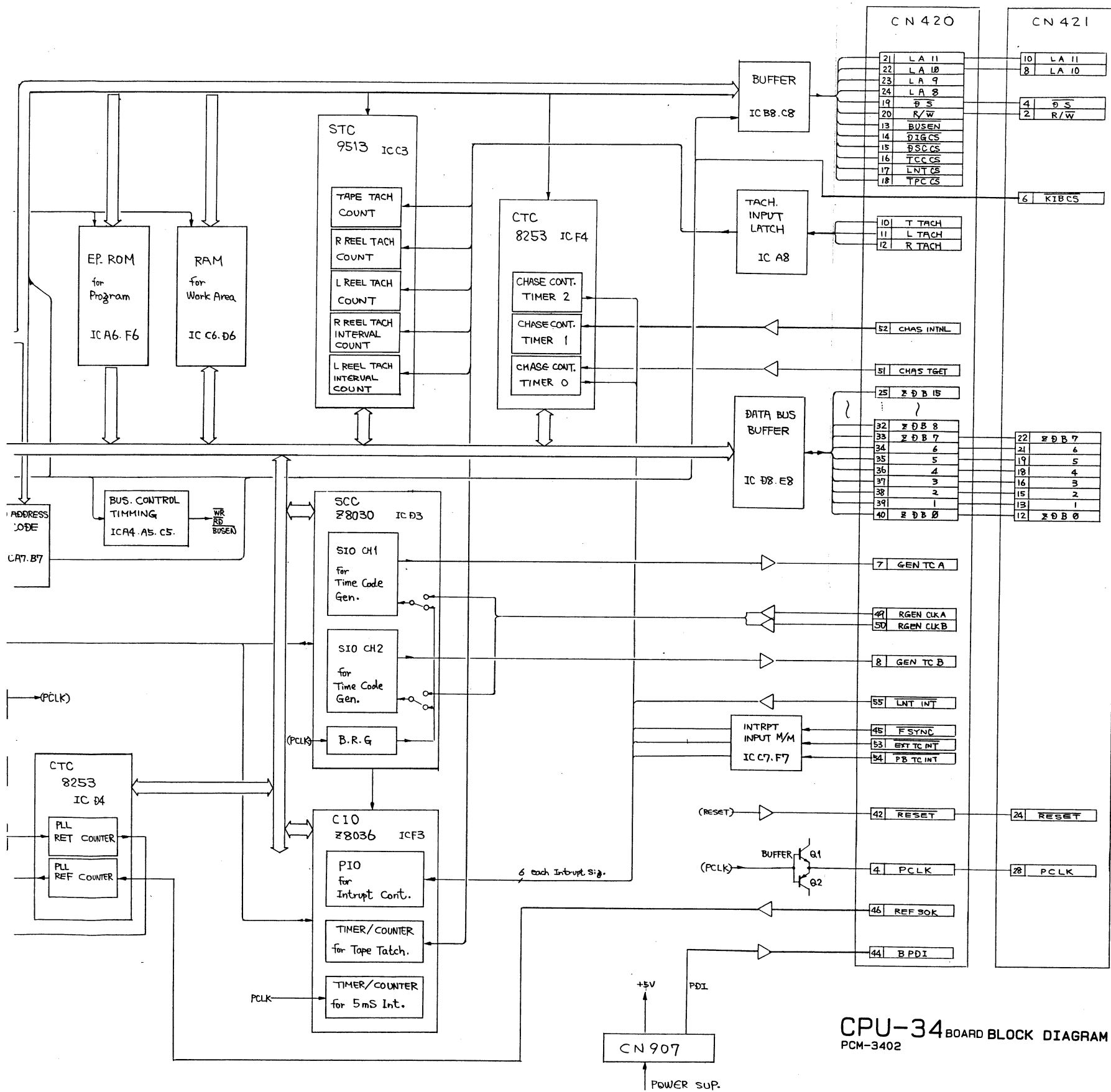


ARP BOARD BLOCK DIAGRAM
PCM-3402
A-13

CPU-34 BLOCK DIAGRAM

CPU-
PCM-3402

BLOCK DIAGRAM CPU-34 CPU-34 BLOCK DIAGRAM



CPU-34 BOARD BLOCK DIAGRAM
PCM-3402

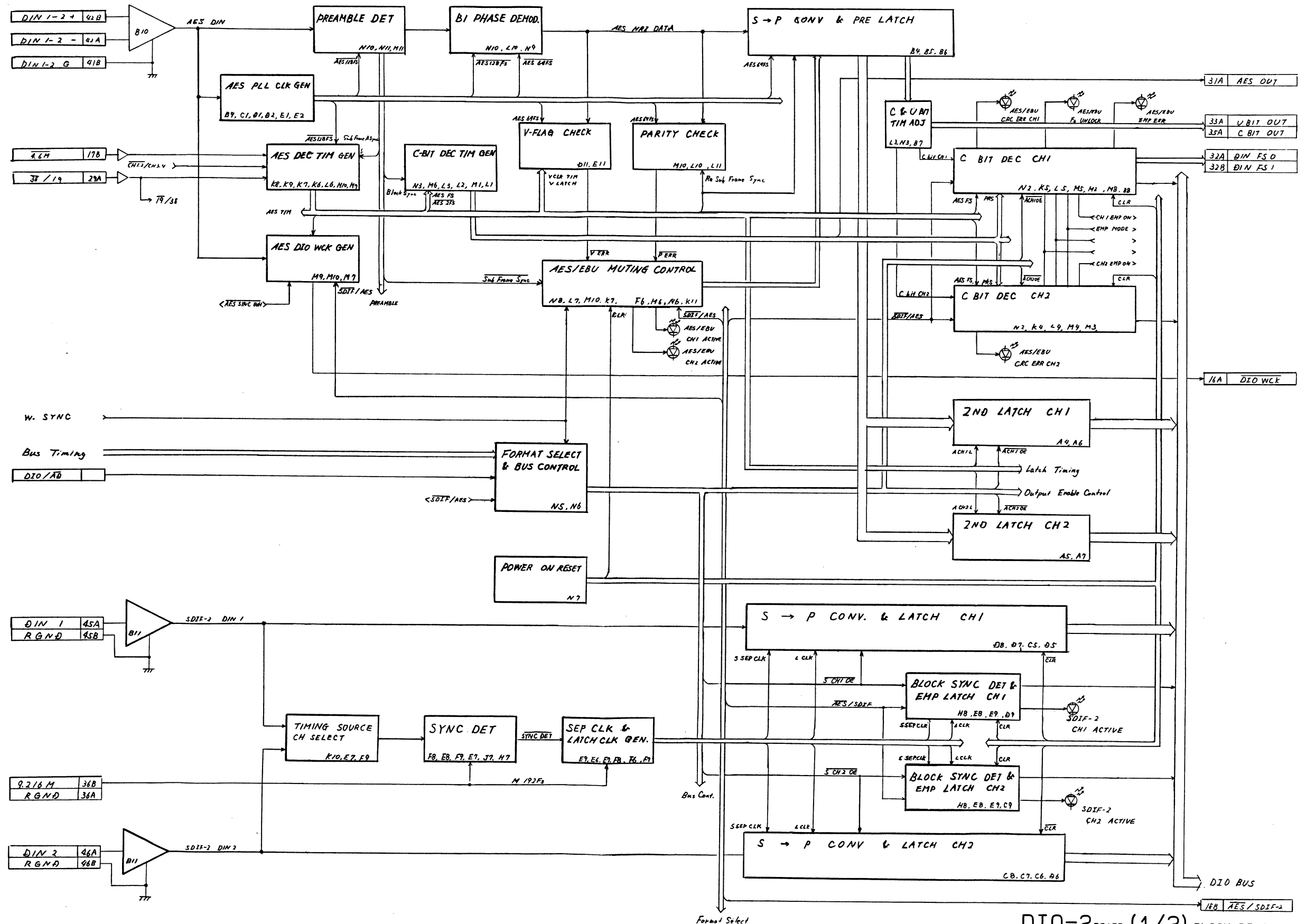
CTL-1 BLOCK DIAGRAM

CTL-1 BLOCK DIAGRAM



BLOCK DIAGRAM DIO-2 (1/2) DIO-2 (1/2) BLOCK DIAGRAM

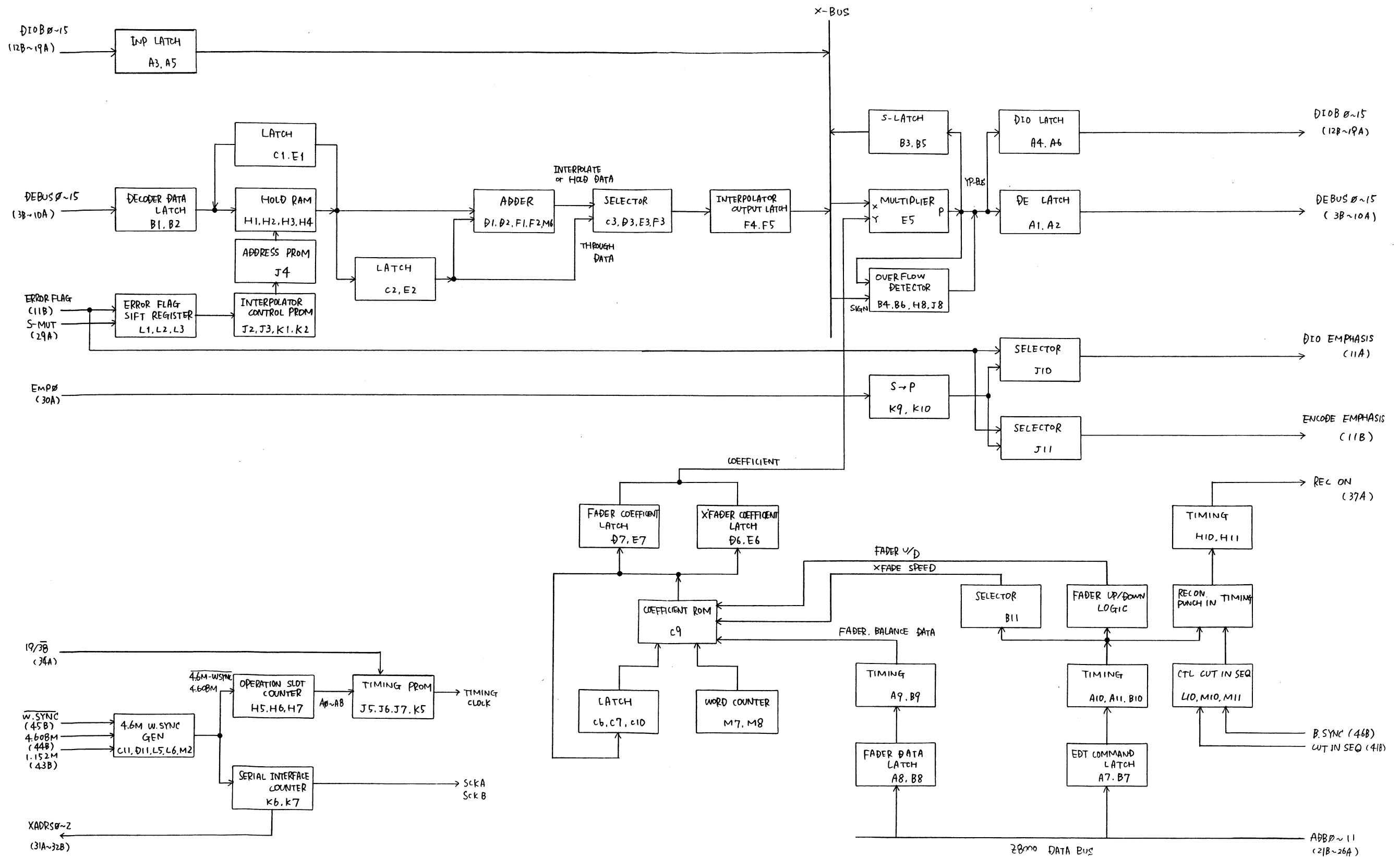
DIO-2 (1/2) BLOCK DIAGRAM



DIO-2 BOARD (1/2) BLOCK DIAGRAM
PCM-3402

BLOCK DIAGRAM ED-16 ED-16 BLOCK DIAGRAM

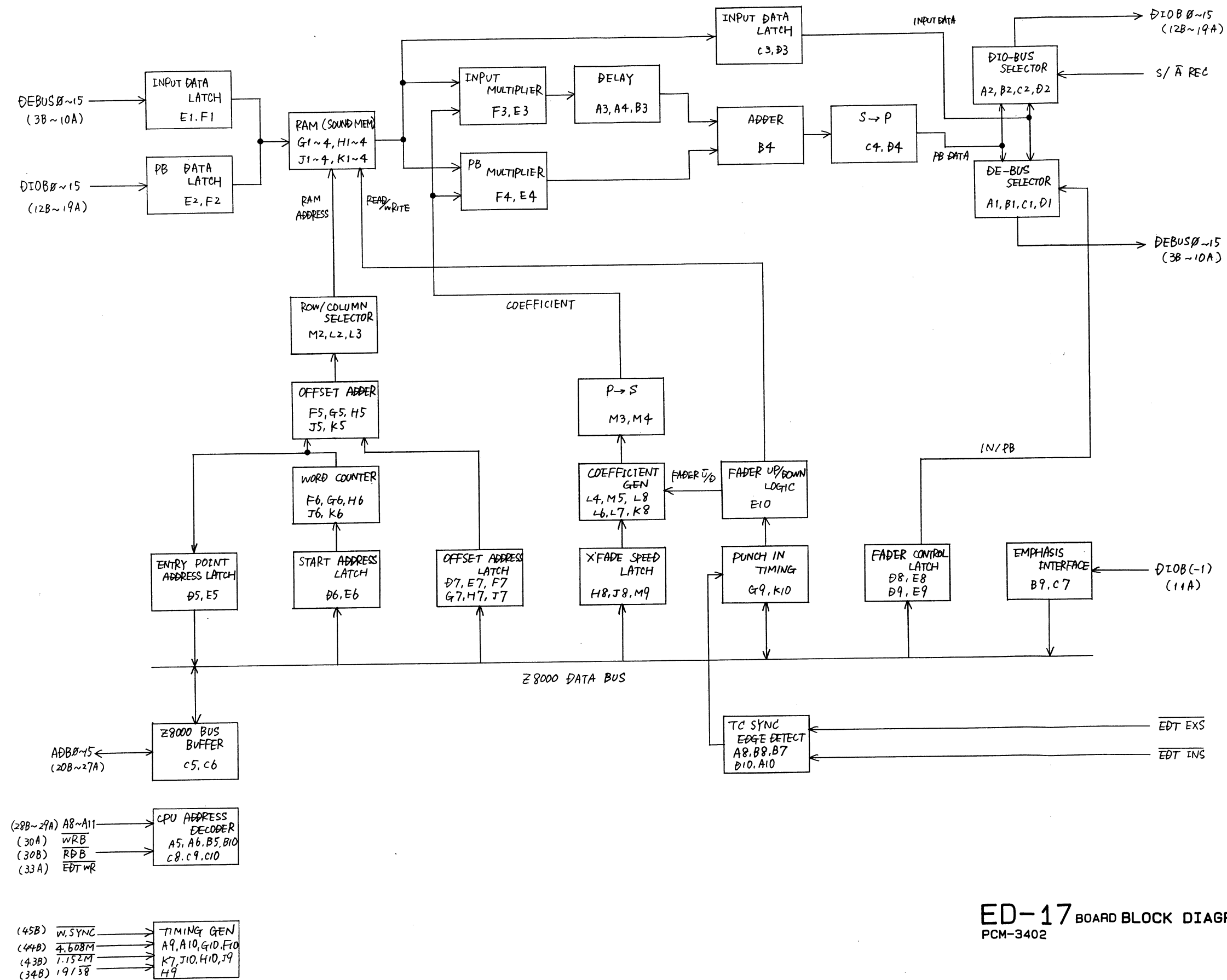
ED-16 BLOCK DIAGRAM



ED-16 BOARD BLOCK DIAGRAM

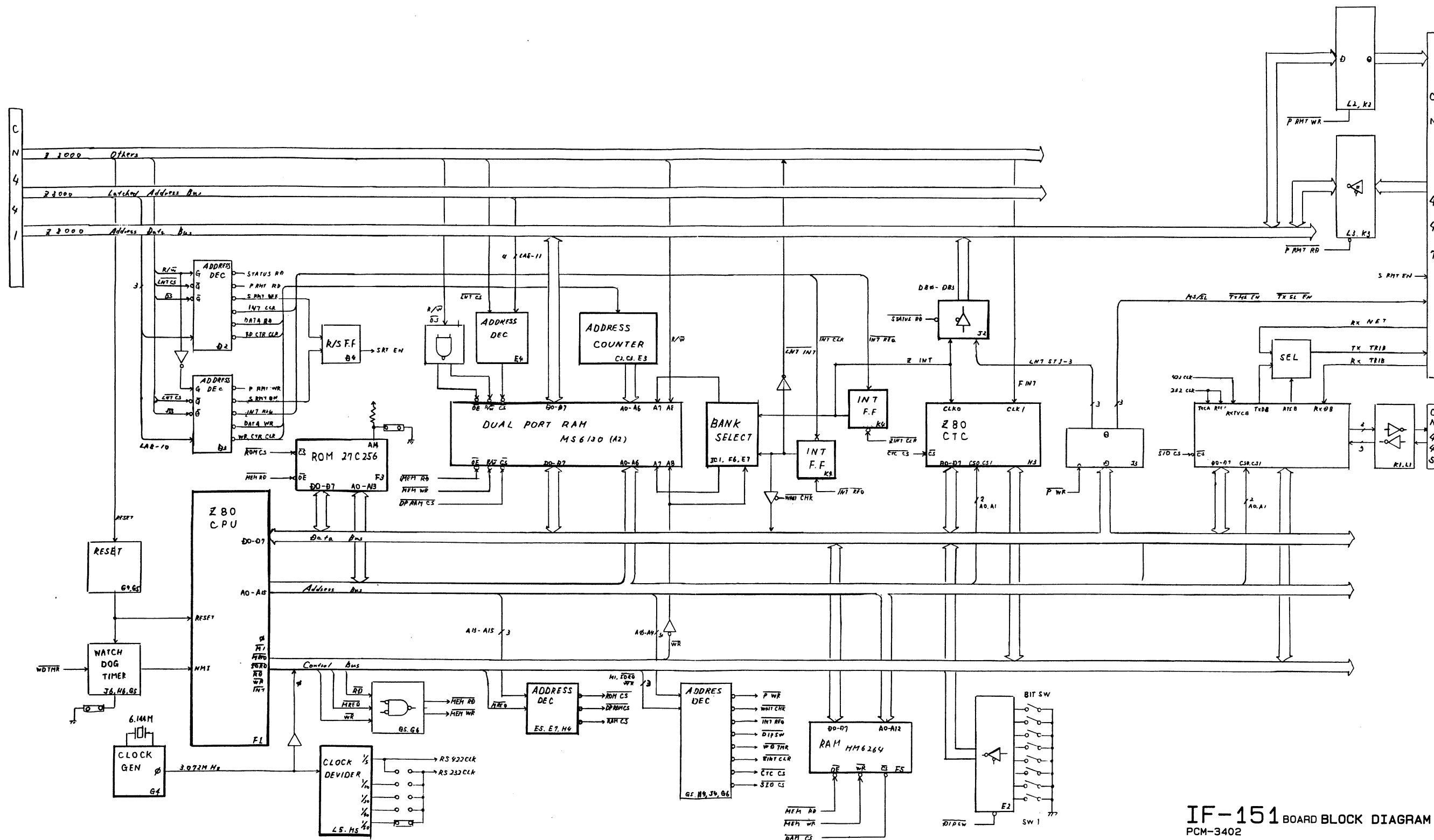
BLOCK DIAGRAM ED-17 ED-17 BLOCK DIAGRAM

ED-17 BLOCK DIAGRAM



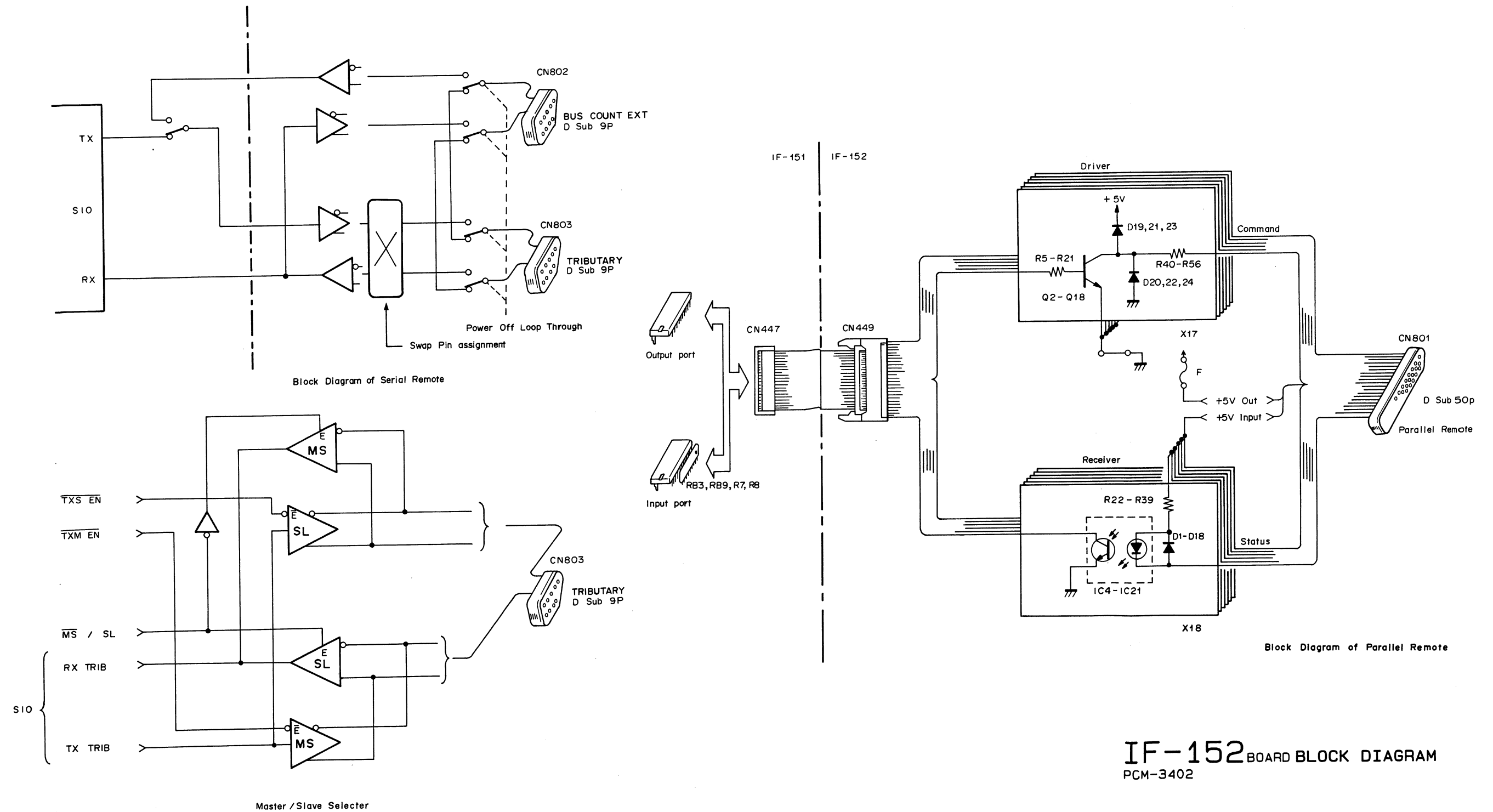
ED-17 BOARD BLOCK DIAGRAM
PCM-3402

IF-151 BLOCK DIAGRAM



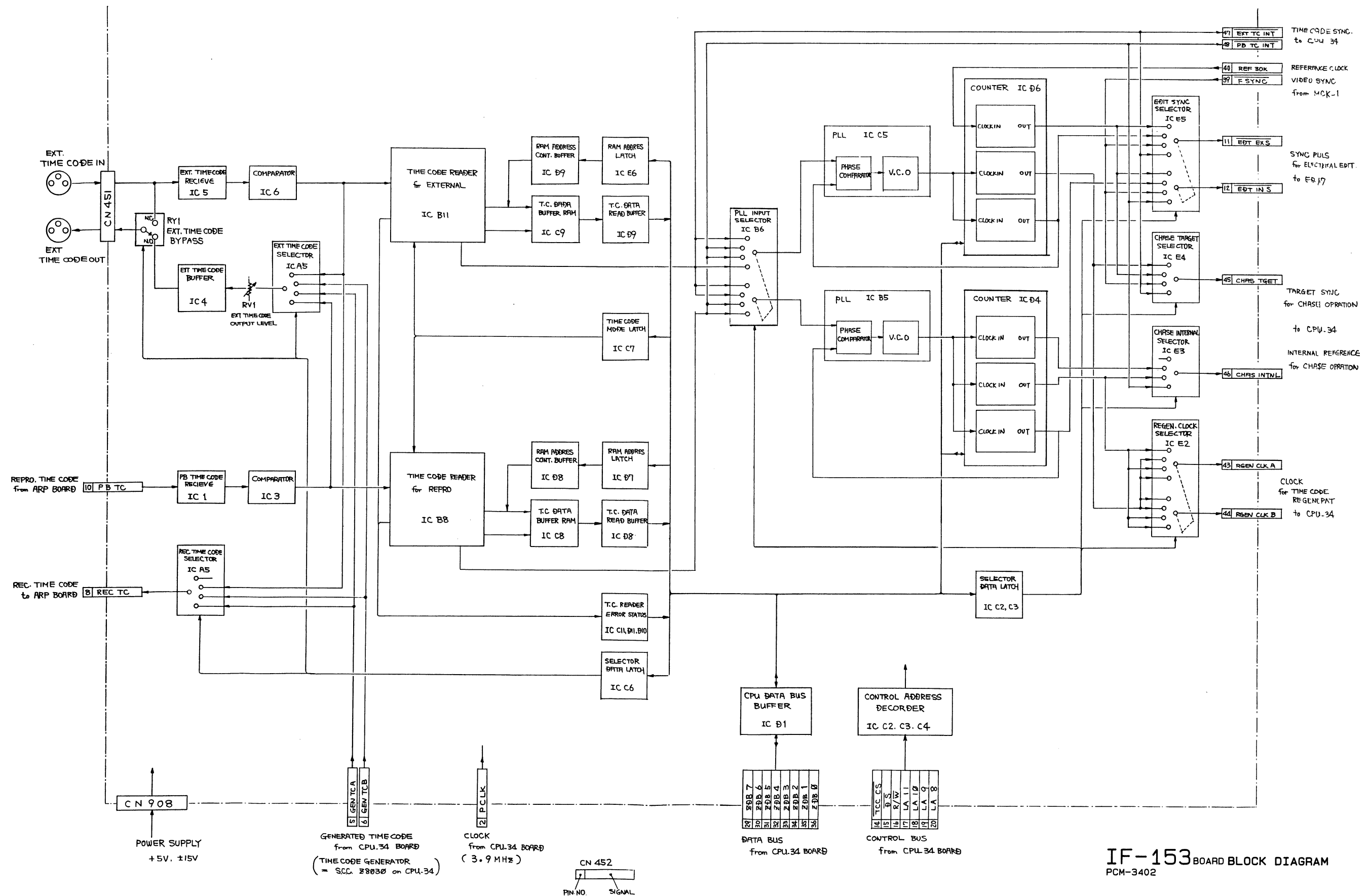
IF-151 BOARD BLOCK DIAGRAM
PCM-3402

IF-152 BLOCK DIAGRAM



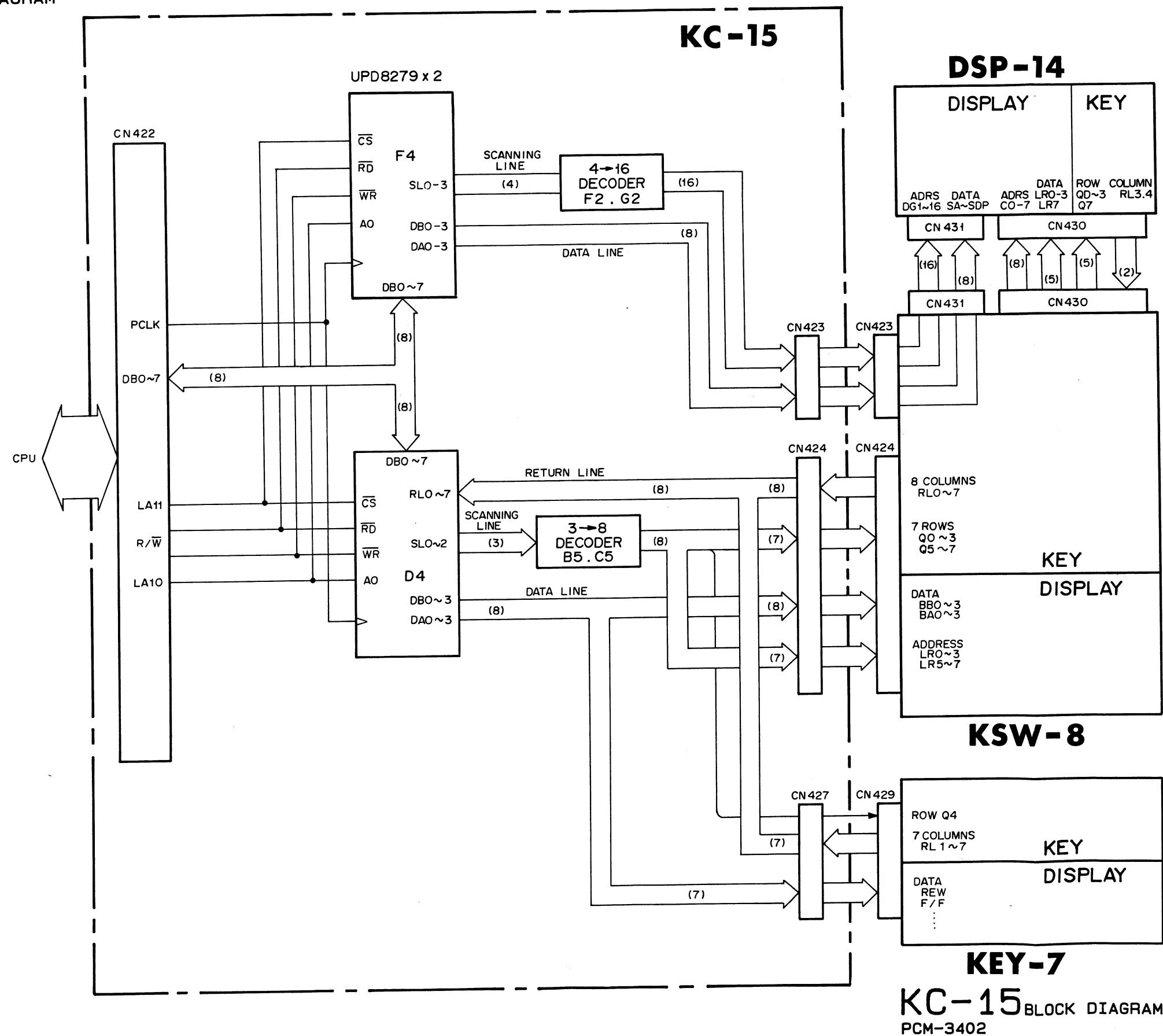
BLOCK DIAGRAM IF-153 IF-153 BLOCK DIAGRAM

IF-153 BLOCK DIAGRAM



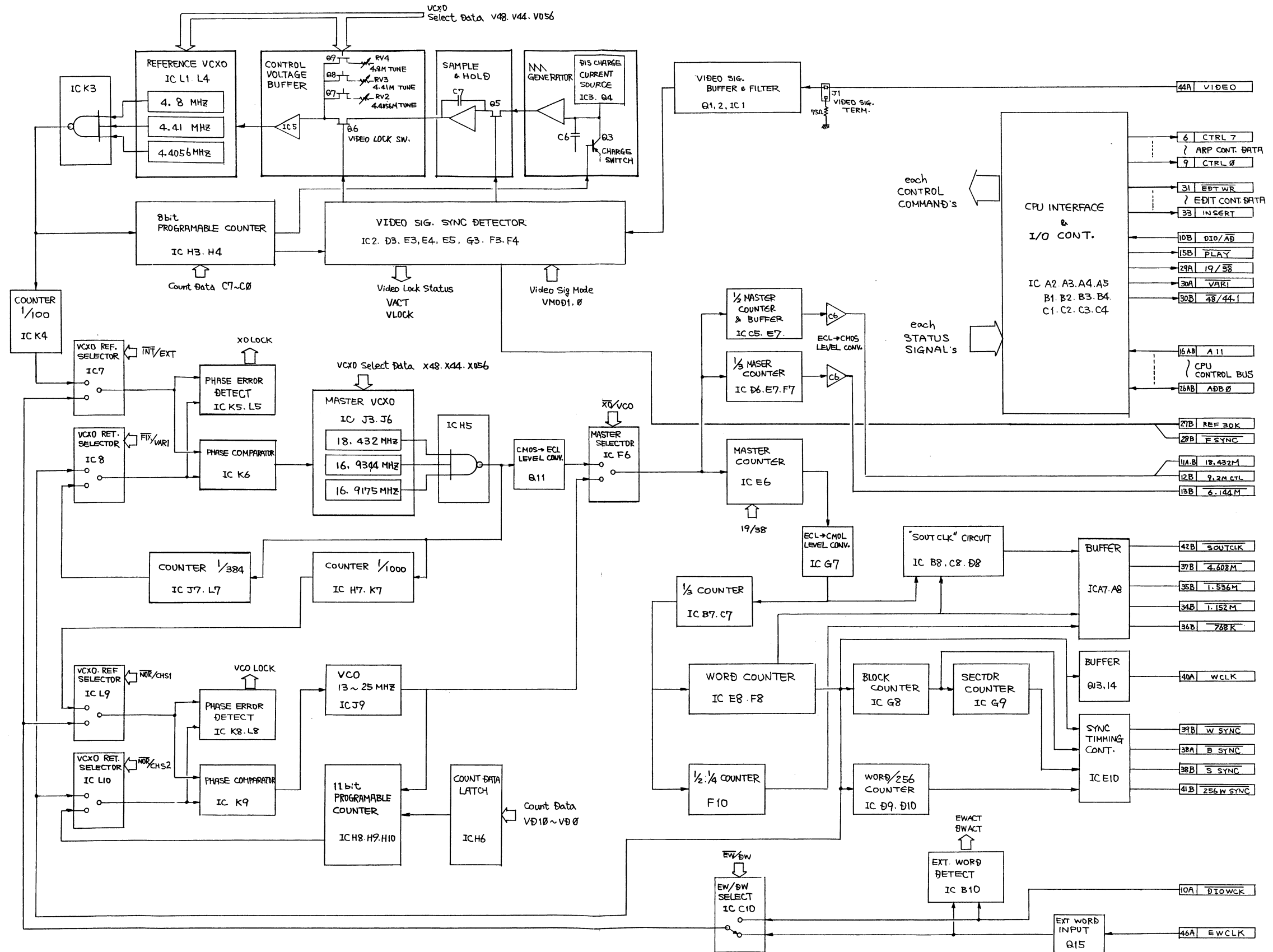
IF-153 BOARD BLOCK DIAGRAM
PCM-3402

KC-15 BLOCK DIAGRAM



BLOCK DIAGRAM MCK-1 MCK-1 BLOCK DIAGRAM

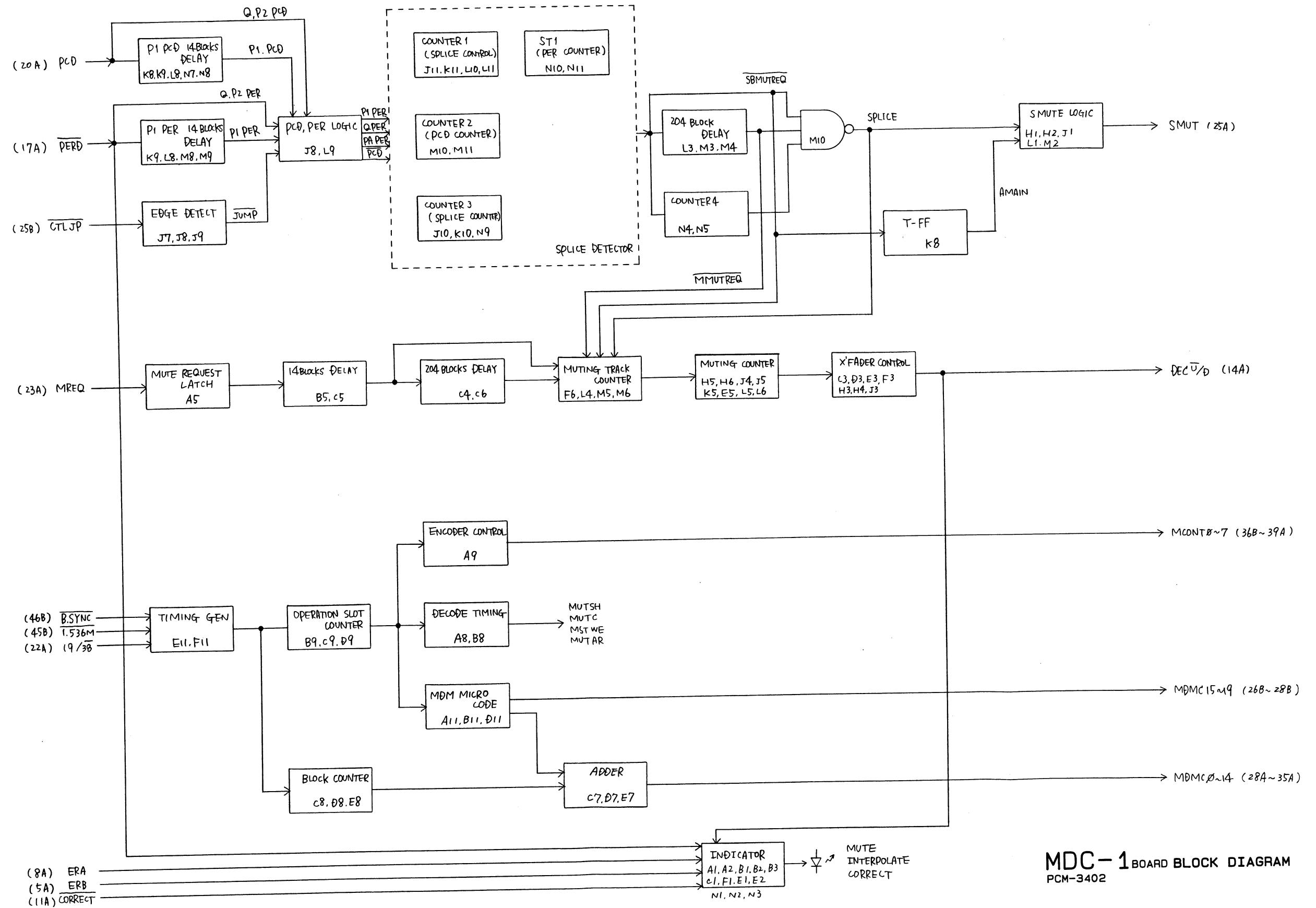
MCK-1 BLOCK DIAGRAM



MCK-1 BOARD BLOCK DIAGRAM
PCM-3402

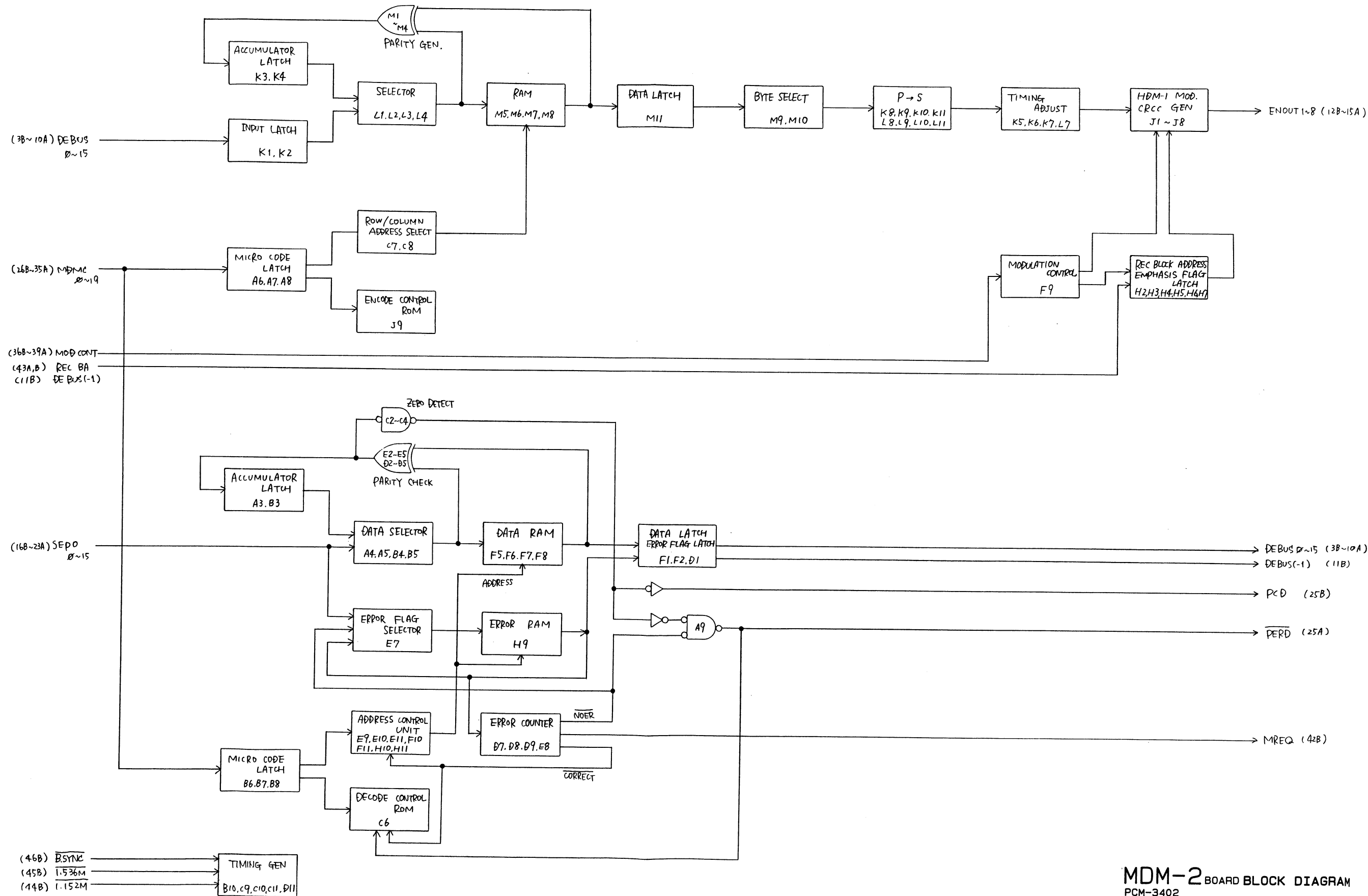
MDC-1 BLOCK DIAGRAM

MDC-1 BLOCK DIAGRAM



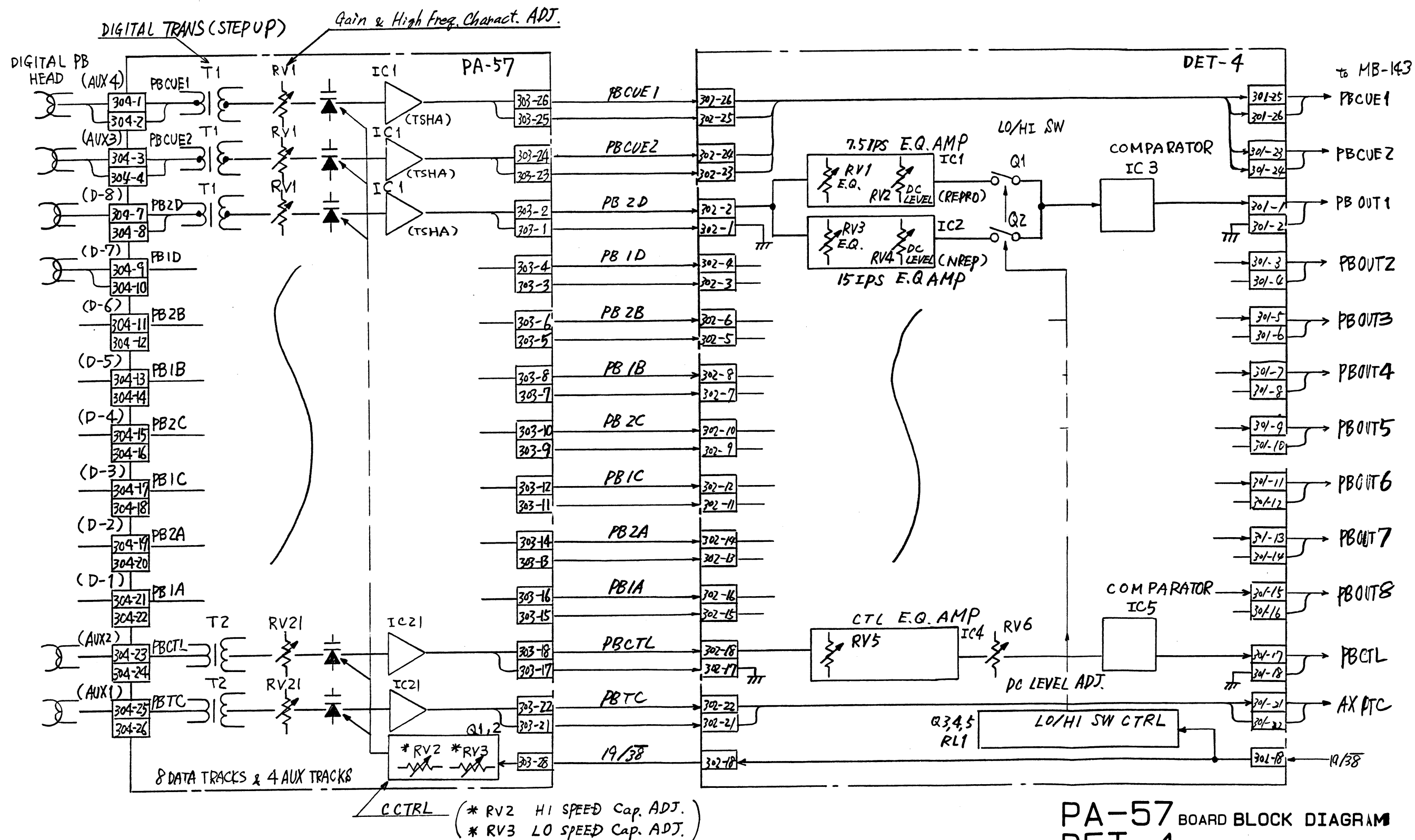
BLOCK DIAGRAM MDM-2 MDM-2 BLOCK DIAGRAM

MDM-2 BLOCK DIAGRAM

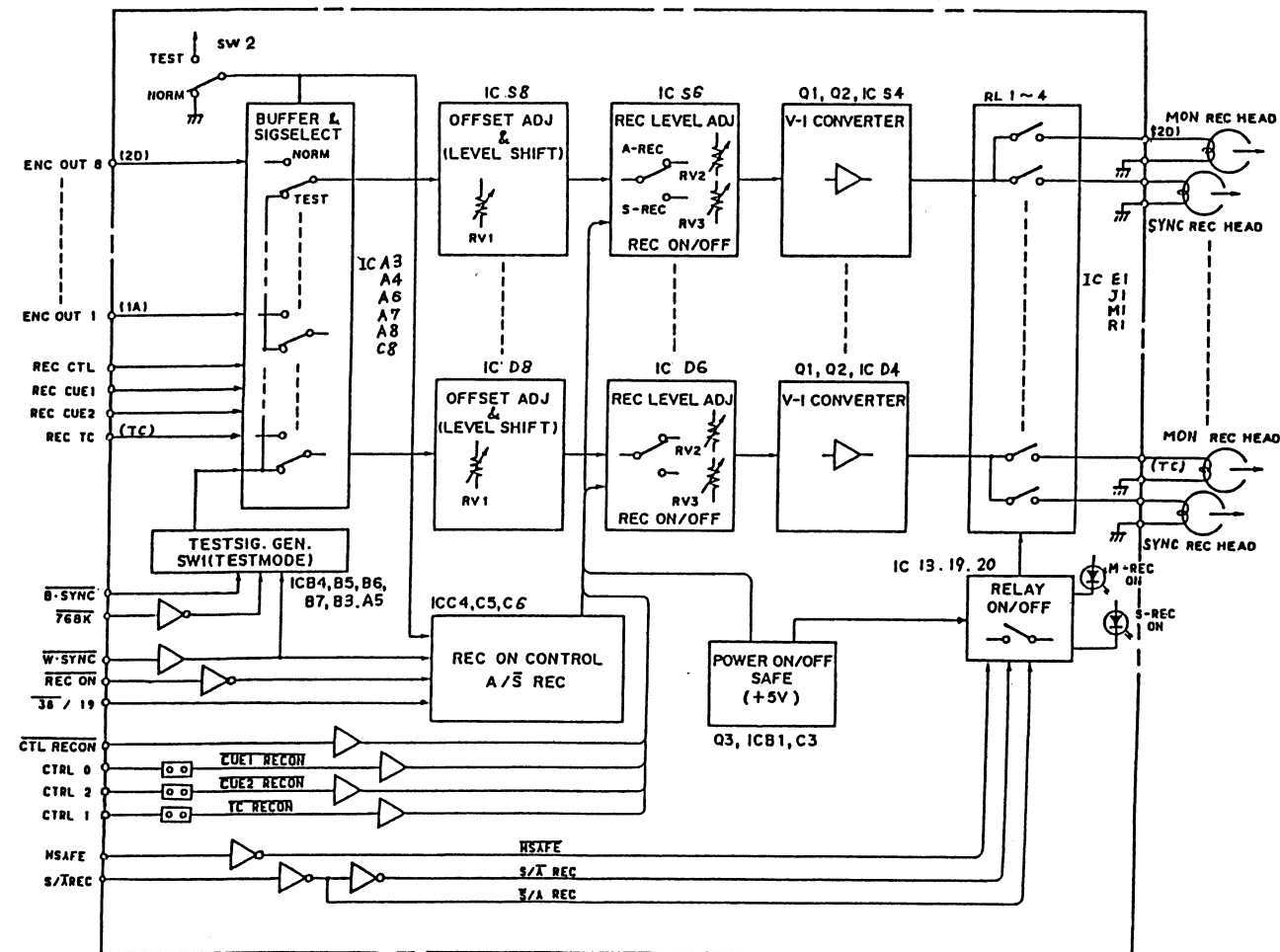


MDM-2 BOARD BLOCK DIAGRAM
PCM-3402

PA-57 BLOCK DIAGRAM
DET-4 BLOCK DIAGRAM



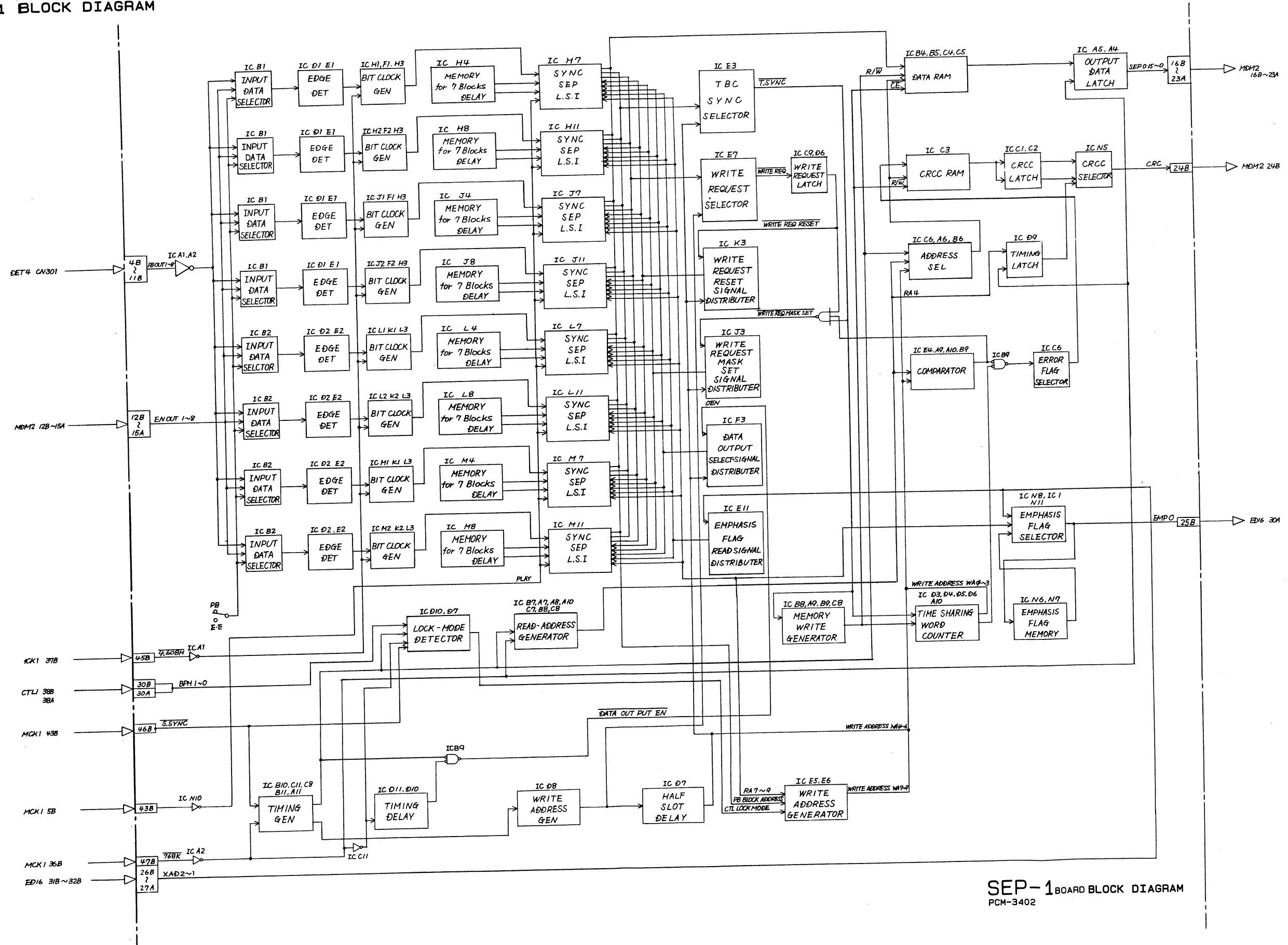
REC BLOCK DIAGRAM



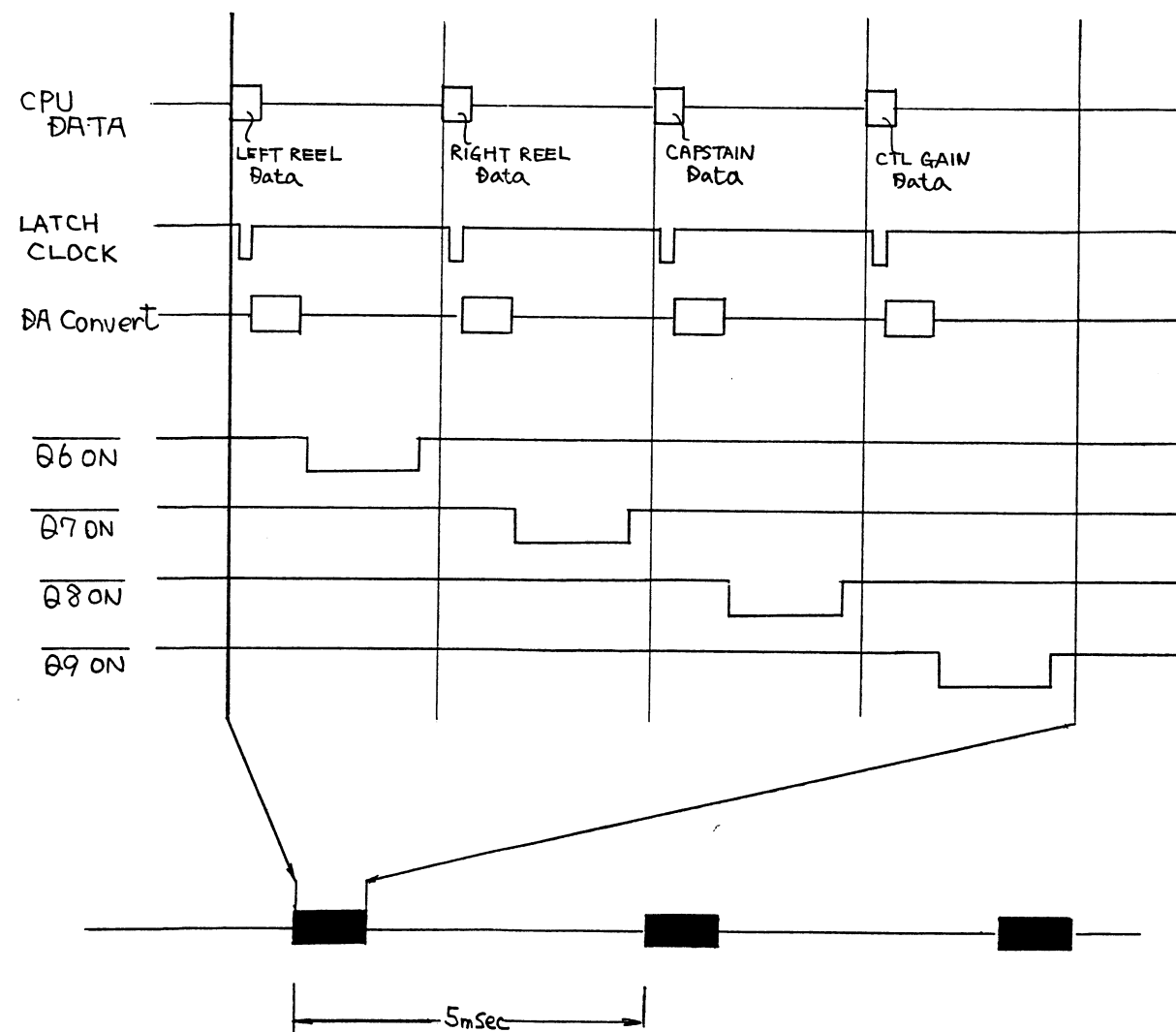
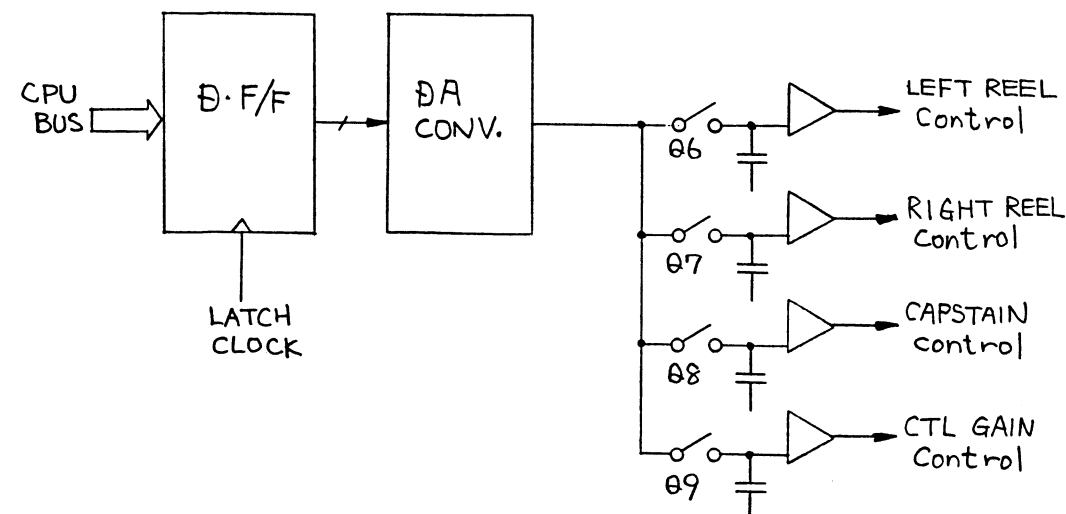
REC BOARD BLOCK DIAGRAM
PCM-3402

BLOCK DIAGRAM SEP-1 SEP-1 BLOCK DIAGRAM

SEP-1 BLOCK DIAGRAM

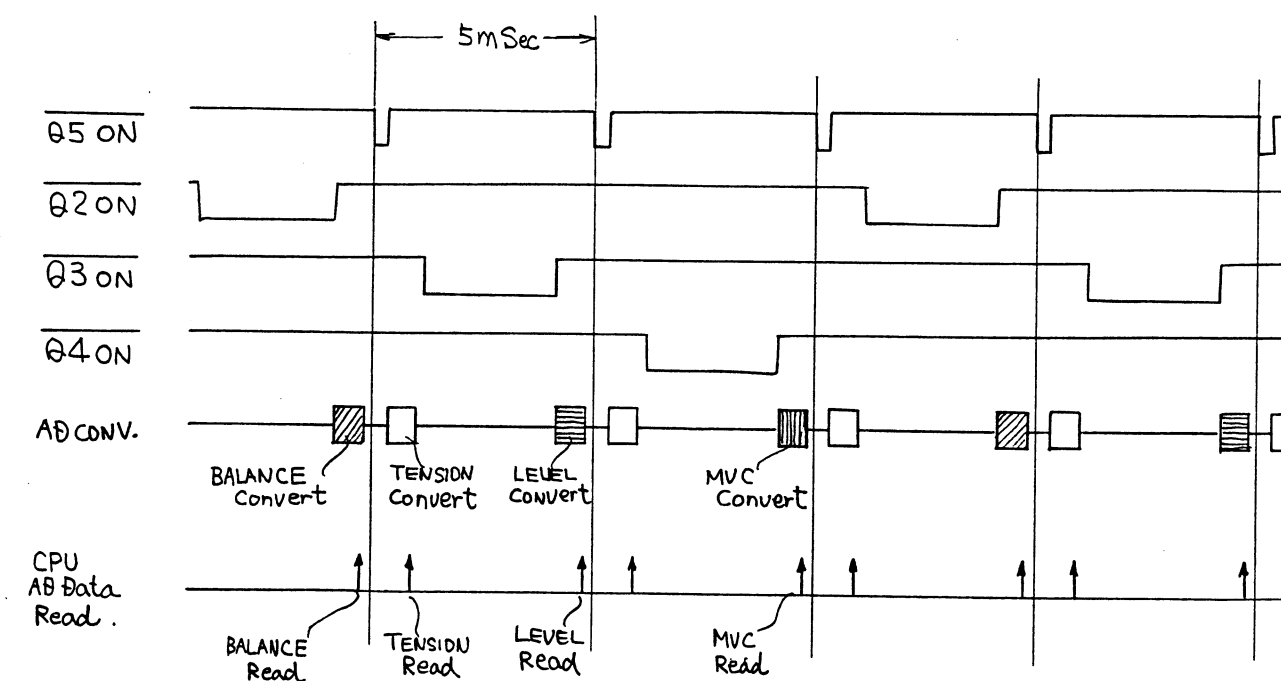
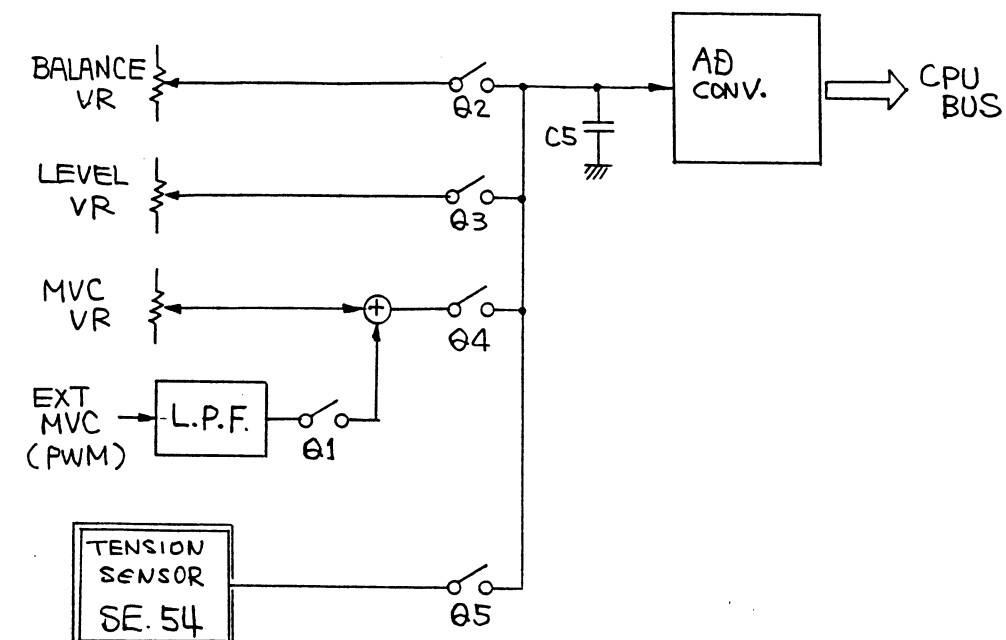


TPC-1 (1/2) BLOCK DIAGRAM



TPC-1 BOARD (1/2) BLOCK DIAGRAM
PCM-3402

TPC-1 (2/2) BLOCK DIAGRAM

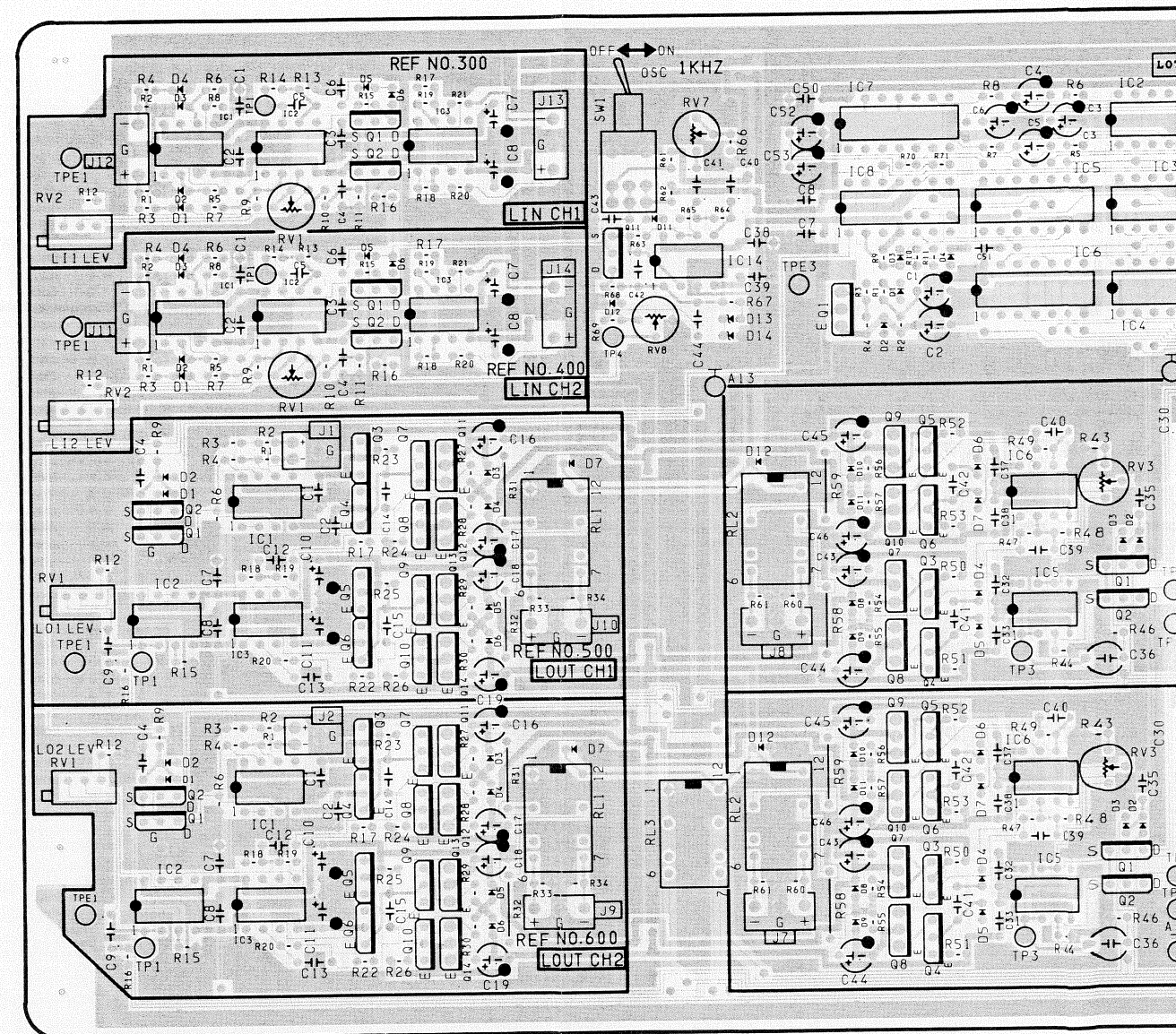


TPC-1 BOARD (2/2) BLOCK DIAGRAM
PCM-3402

SECTION B CIRCUIT BOARD DIAGRAMS

ARP-1 BOARD (1-620-314-13)
Component Side

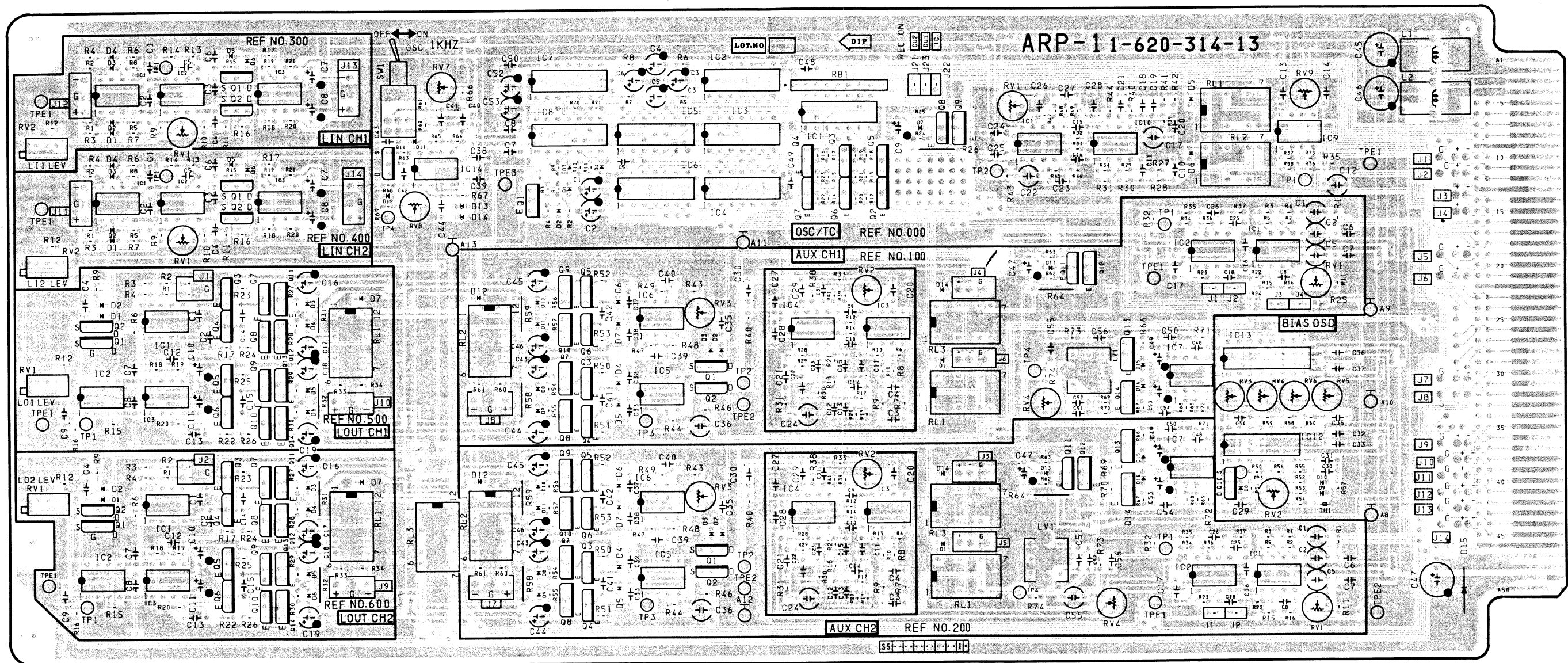
S/N: 10001 TO 11500

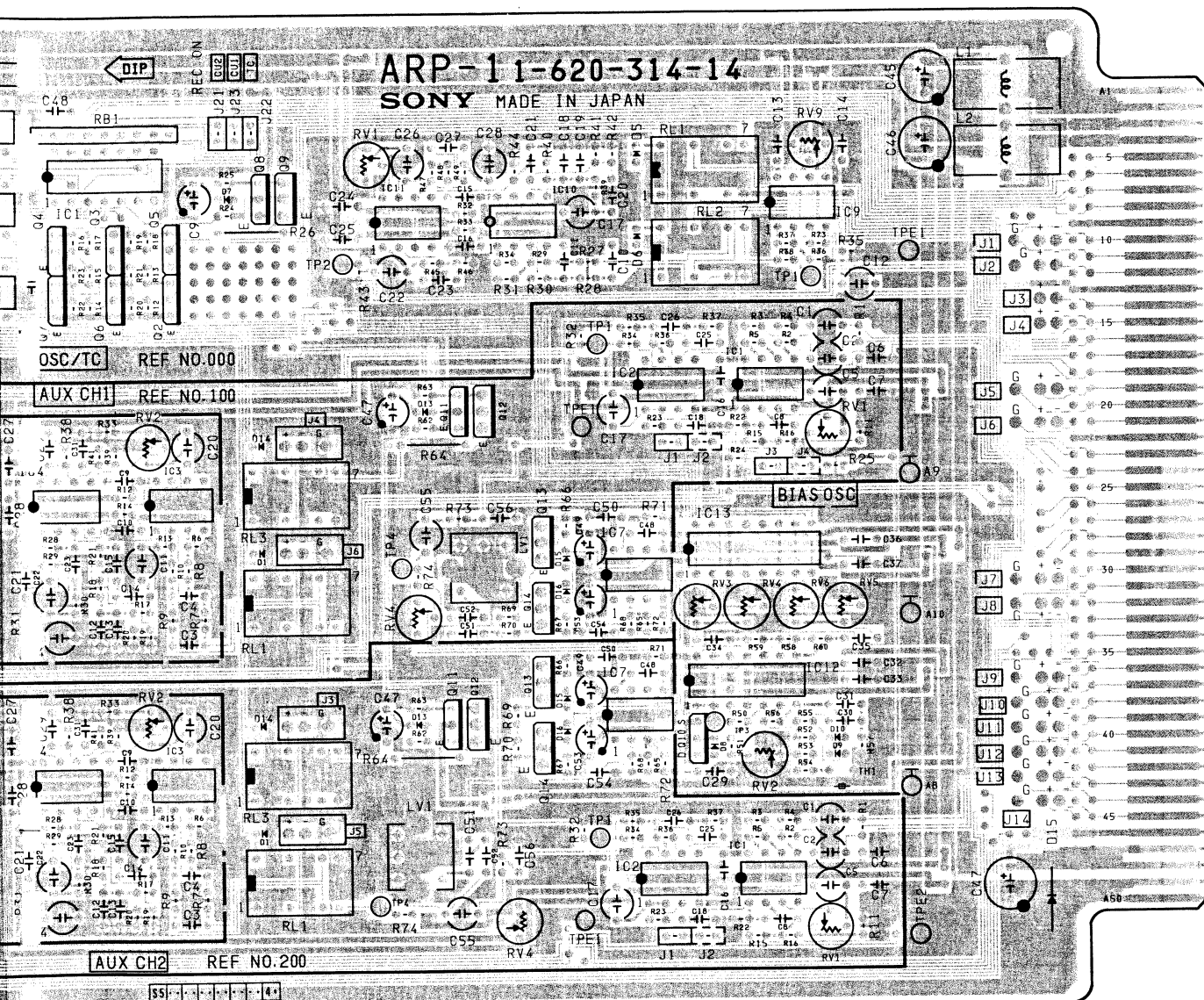


■ SOLDER SIDE PATTERN 1-620-314-13

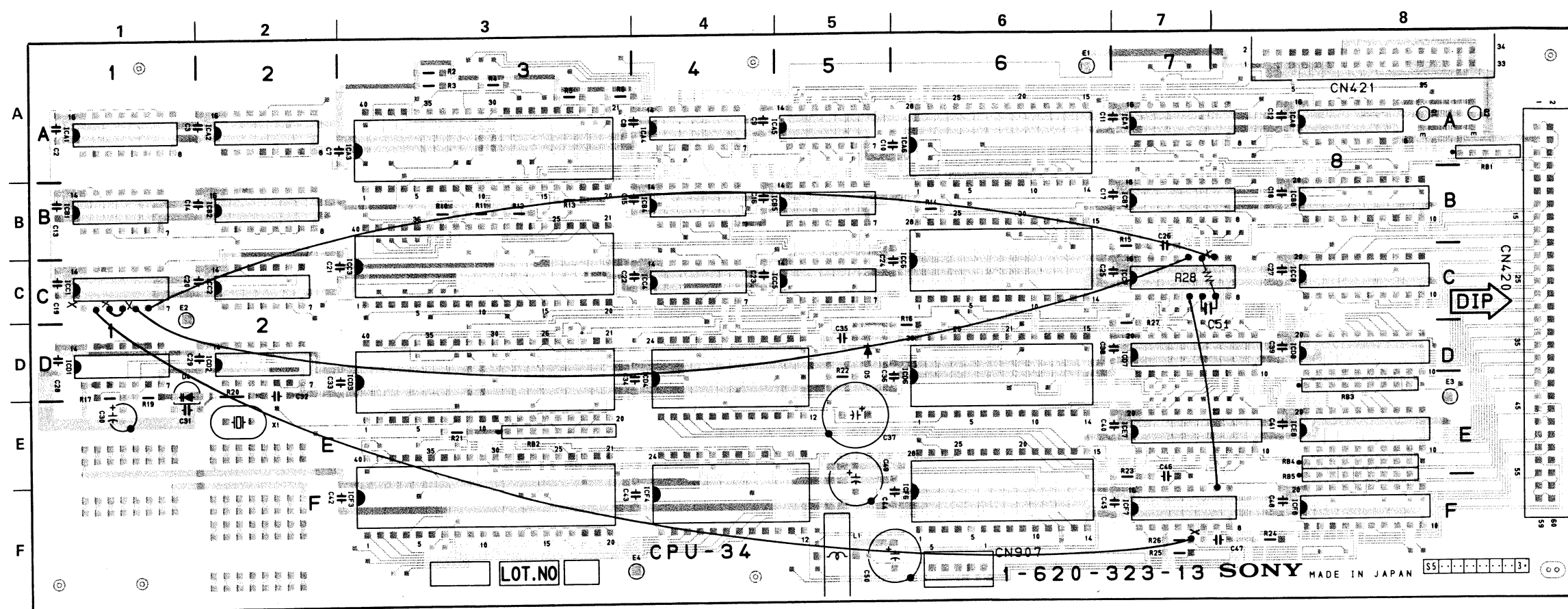
ARP-1 BOARD (1-620-314-13)
Component Side

S/N: 10001 TO 11500





CPU-34 BOARD (1-620-323-13)
Component Side



■ SOLDER SIDE PATTERN

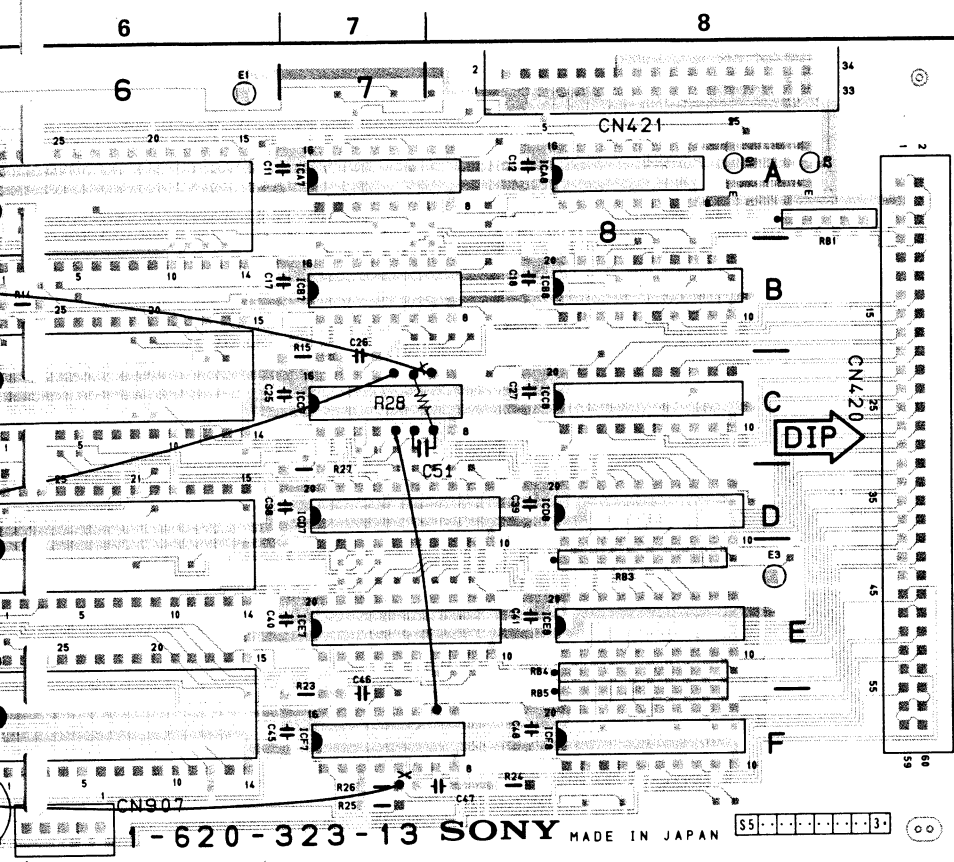
1-620-323-13

Applied Serial No.11201 and higher

Jumpers that have been soldered or cut.	ICC1-4	—X—	ICC1-5
	ICC1-2	—X—	ICC1-4
	ICC1-1	—X—	GND
	ICC7-10	—X—	ICC7-11
	ICF7-10	—X—	R26
	ICC1-2	—	R26
	ICC1-3	—	ICC1-4
	ICC1-5	—	ICC7-12
	ICC1-6	—	ICC7-10
	ICC7-5	—	ICF7-10

Parts have been added.

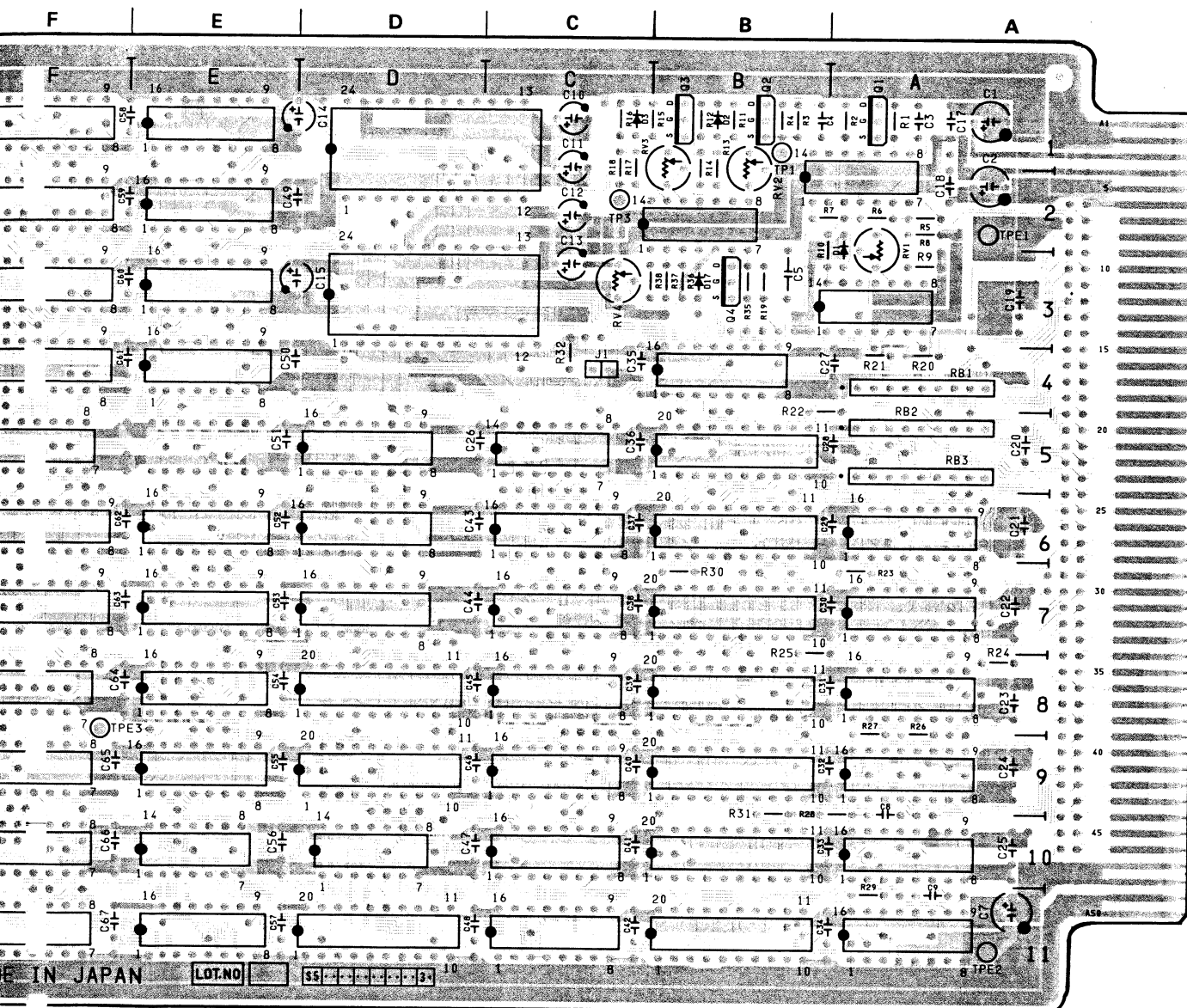
C51
R28



Applied Serial No.11201 and higher	
Jumpers that have been soldered or cut.	ICC1-4 —*— ICC1-5
	ICC1-2 —*— ICC1-4
	ICC1-1 —*— GND
	ICC7-10 —*— ICC7-11
	ICF7-10 —*— R26
	ICC1-2 ——— R26
	ICC1-3 ——— ICC1-4
	ICC1-5 ——— ICC7-12
	ICC1-6 ——— ICC7-10
	ICC7-5 ——— ICF7-10
Parts have been added.	C51 R28

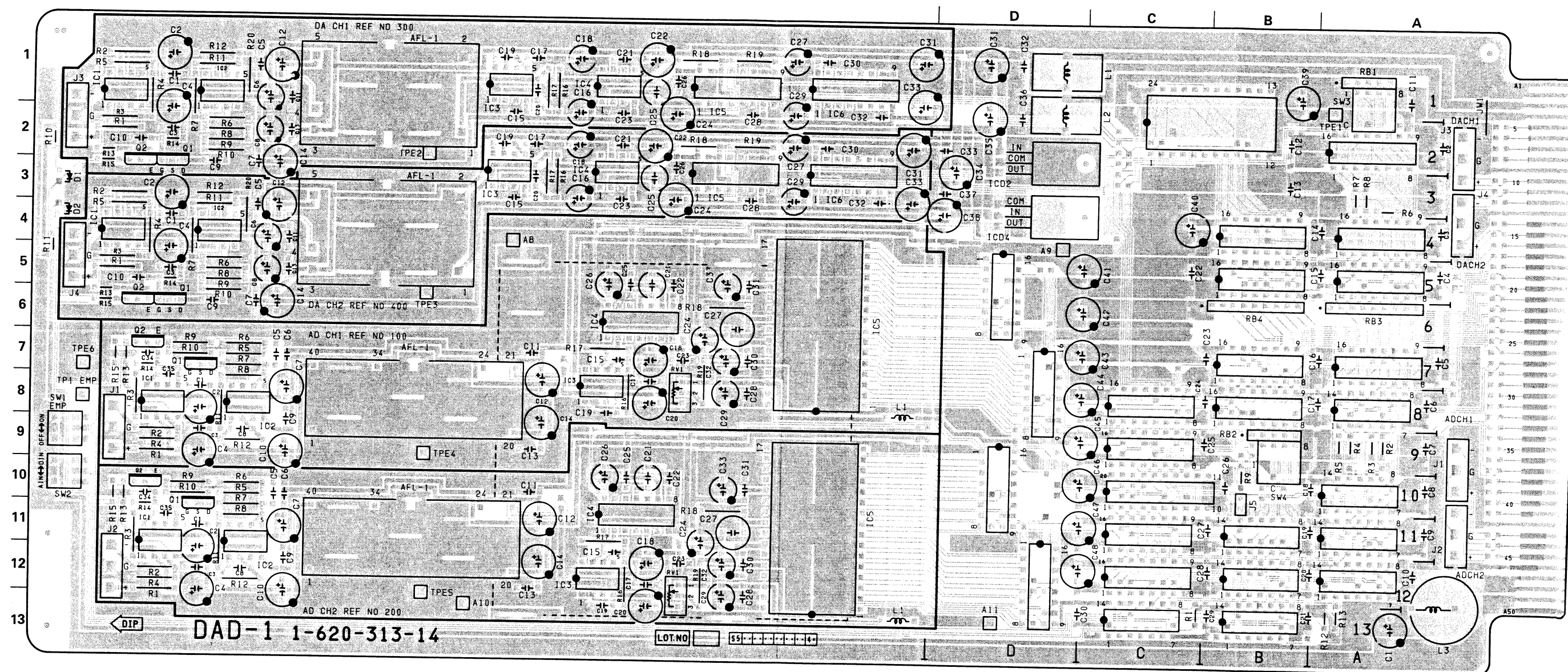
S/N; 10001 TO 10900





S/N: 10901 AND HIGHER

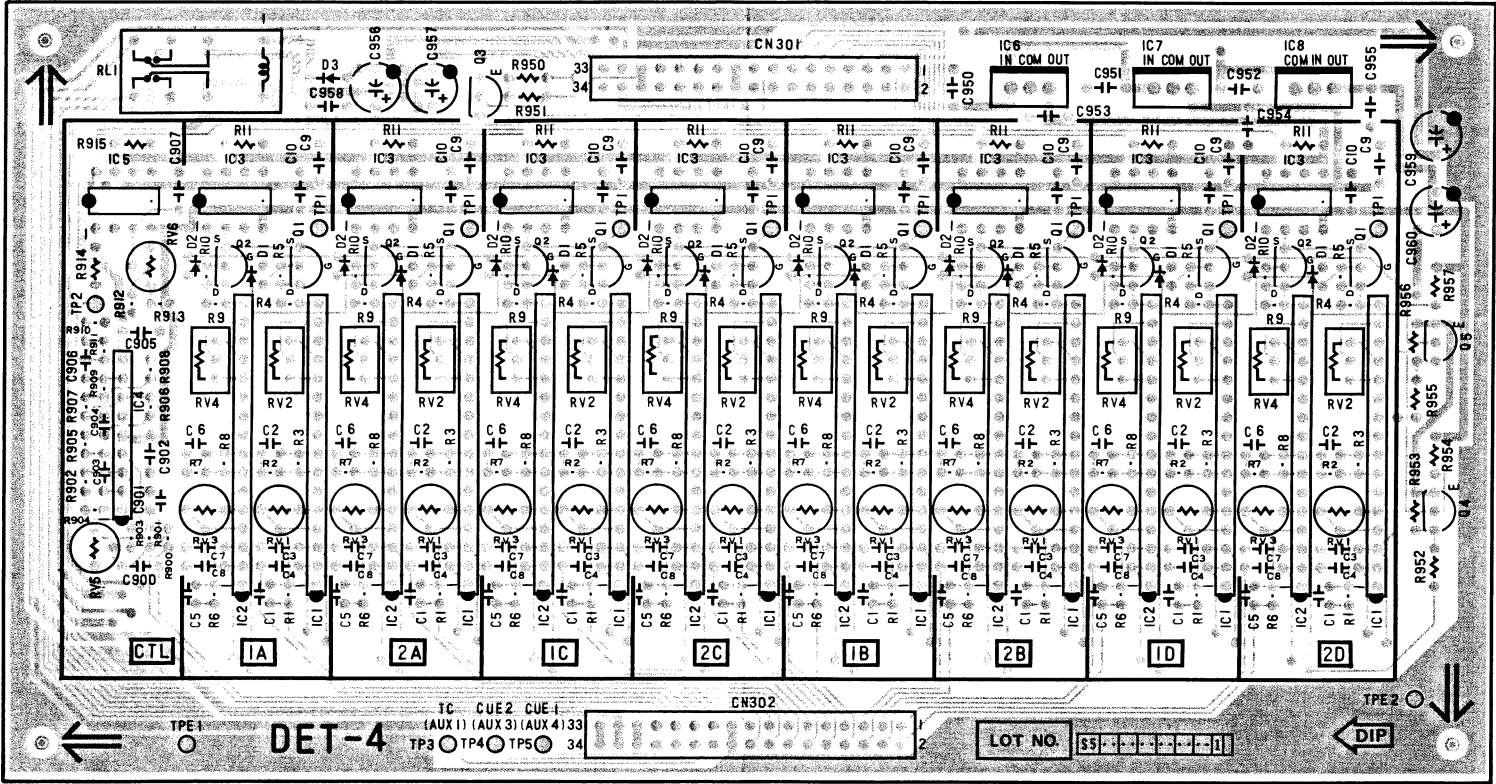


DAD-1 BOARD (1-620-313-14)
Component Side

SOLDER SIDE PATTERN

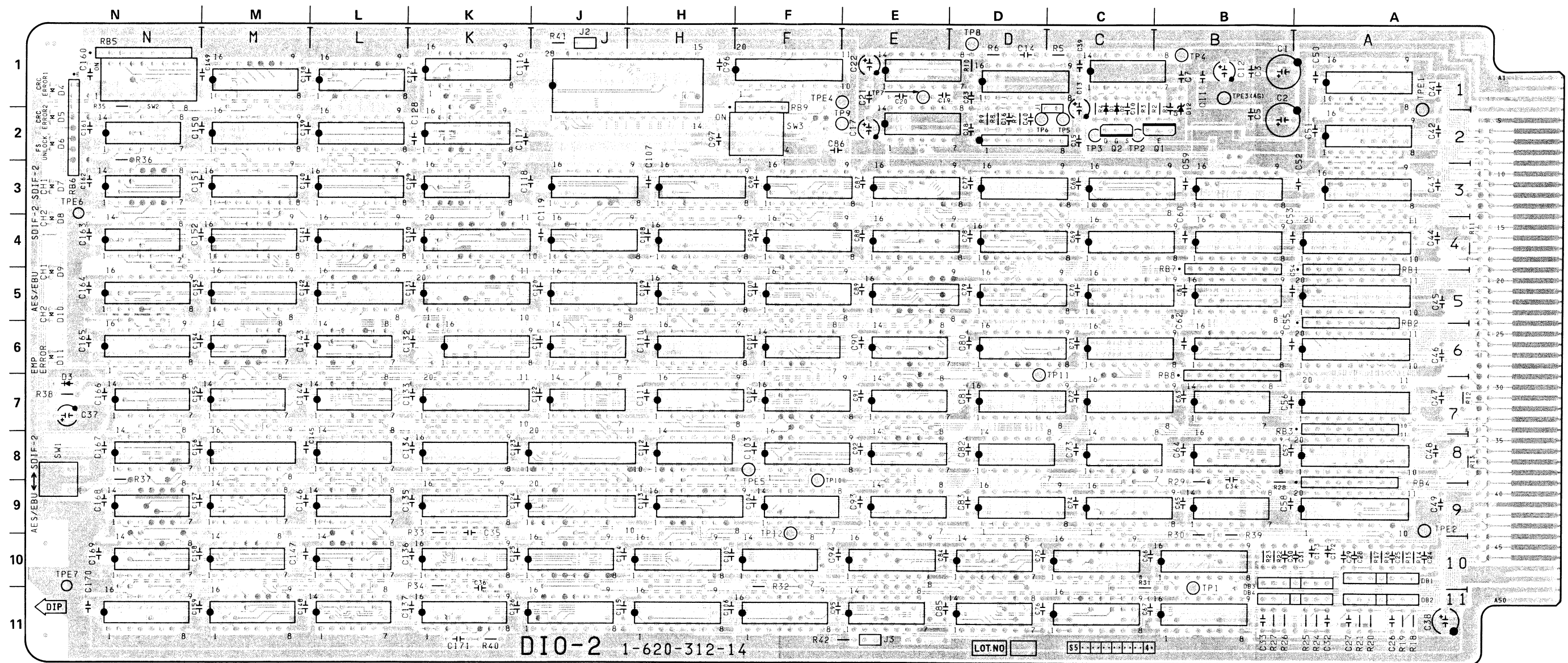
1-620-313-14

DET-4 BOARD (1-620-317-12)
Component Side



SOLDER SIDE PATTERN 1-620-317-12

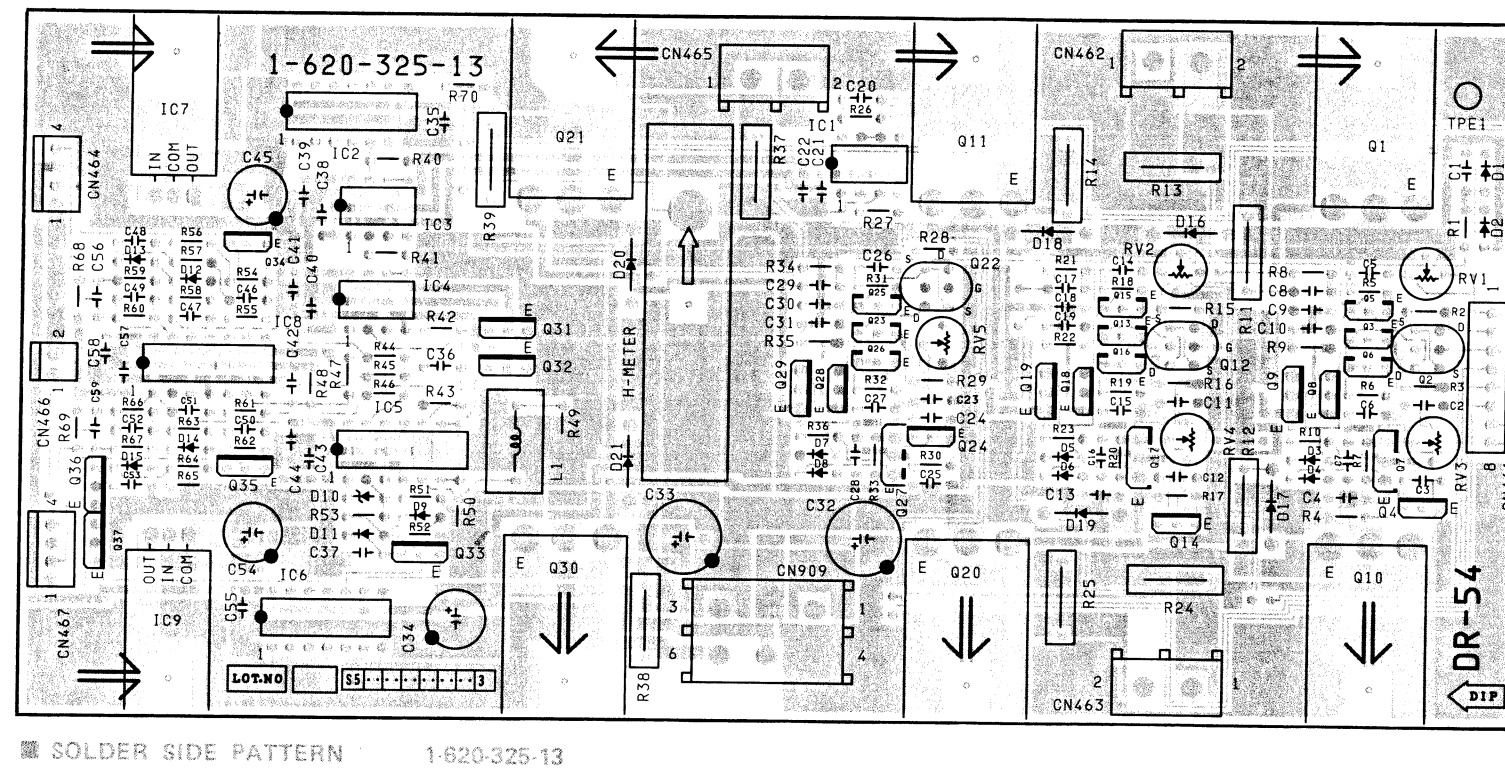
DIO-2 BOARD (1-620-312-14)
Component Side



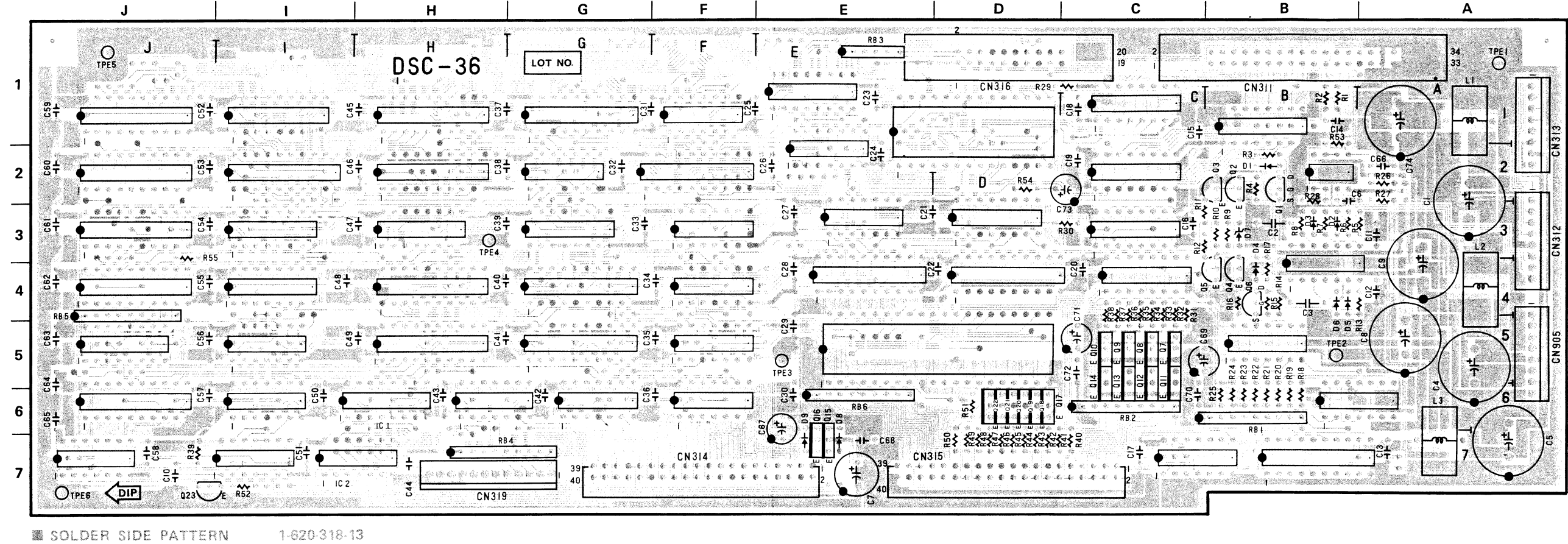
■ SOLDER SIDE PATTERN

1-620-312-14

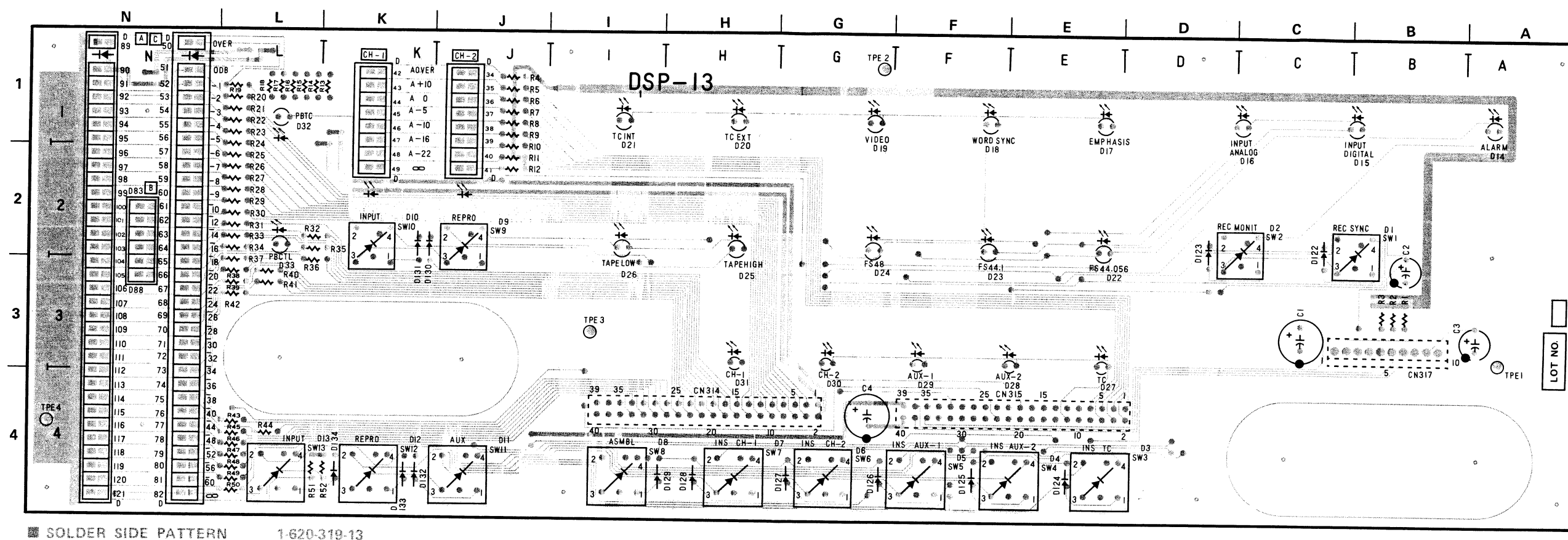
DR-54 BOARD (1-620-325-13)
Component Side



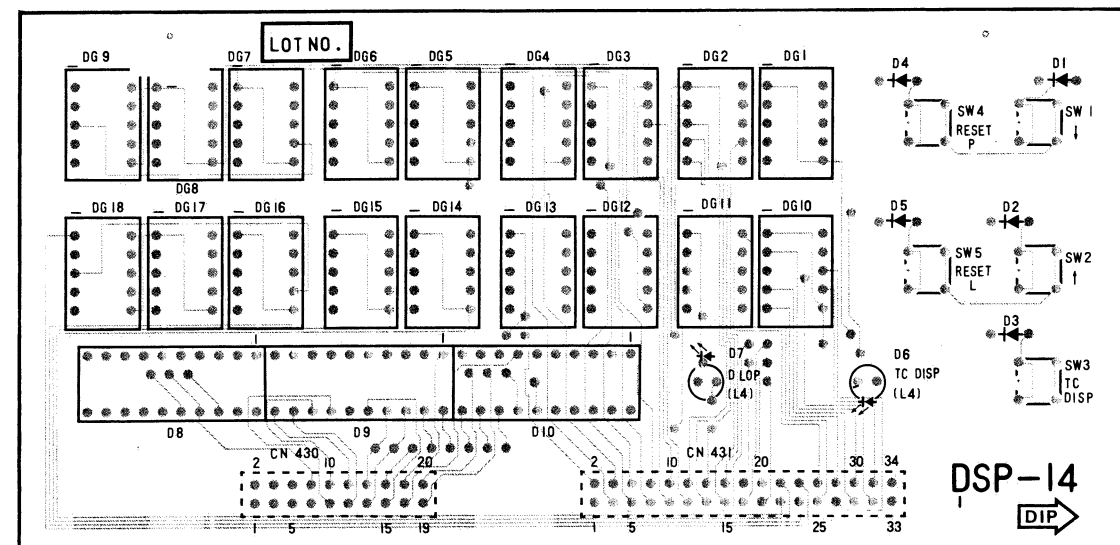
DSC-36 BOARD (1-620-318-13)
Component Side



DSP-13 BOARD (1-620-319-13)
Component Side

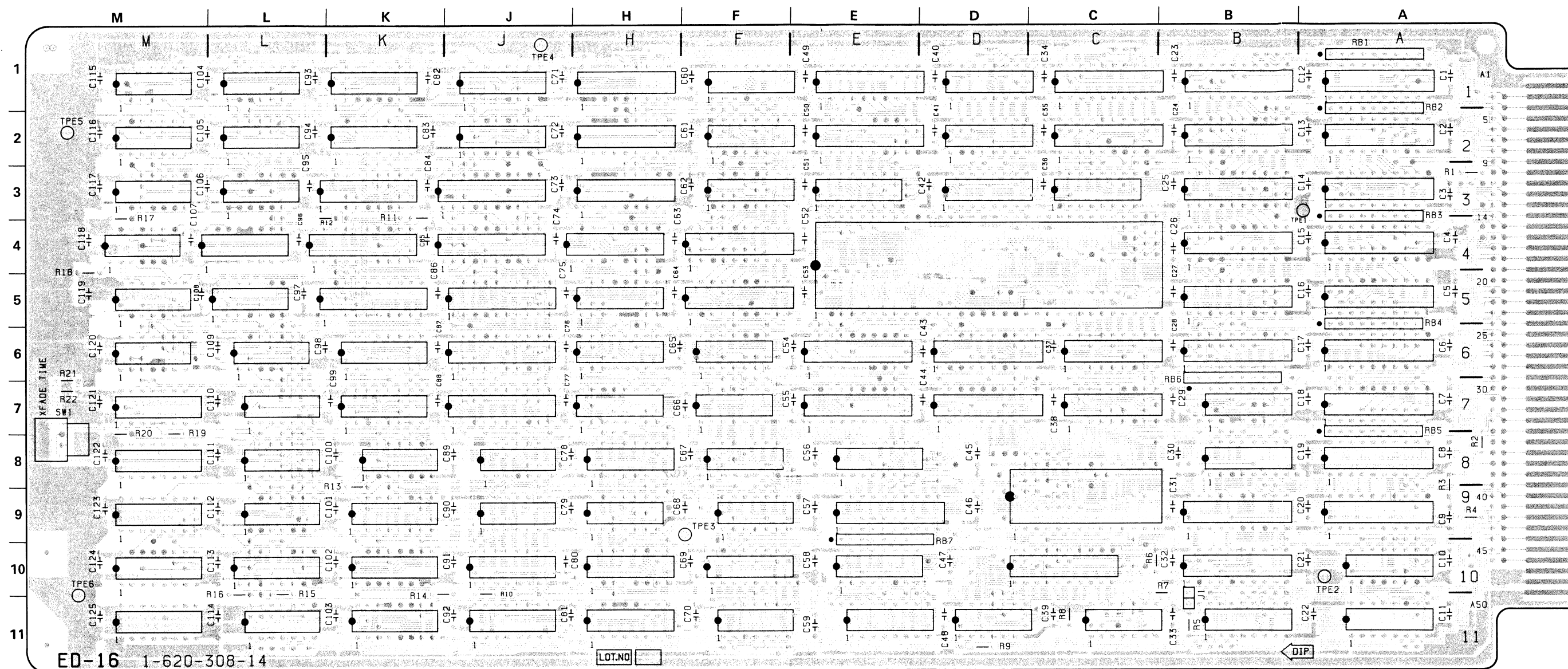


DSP-14 BOARD (1-620-322-13)
Component Side



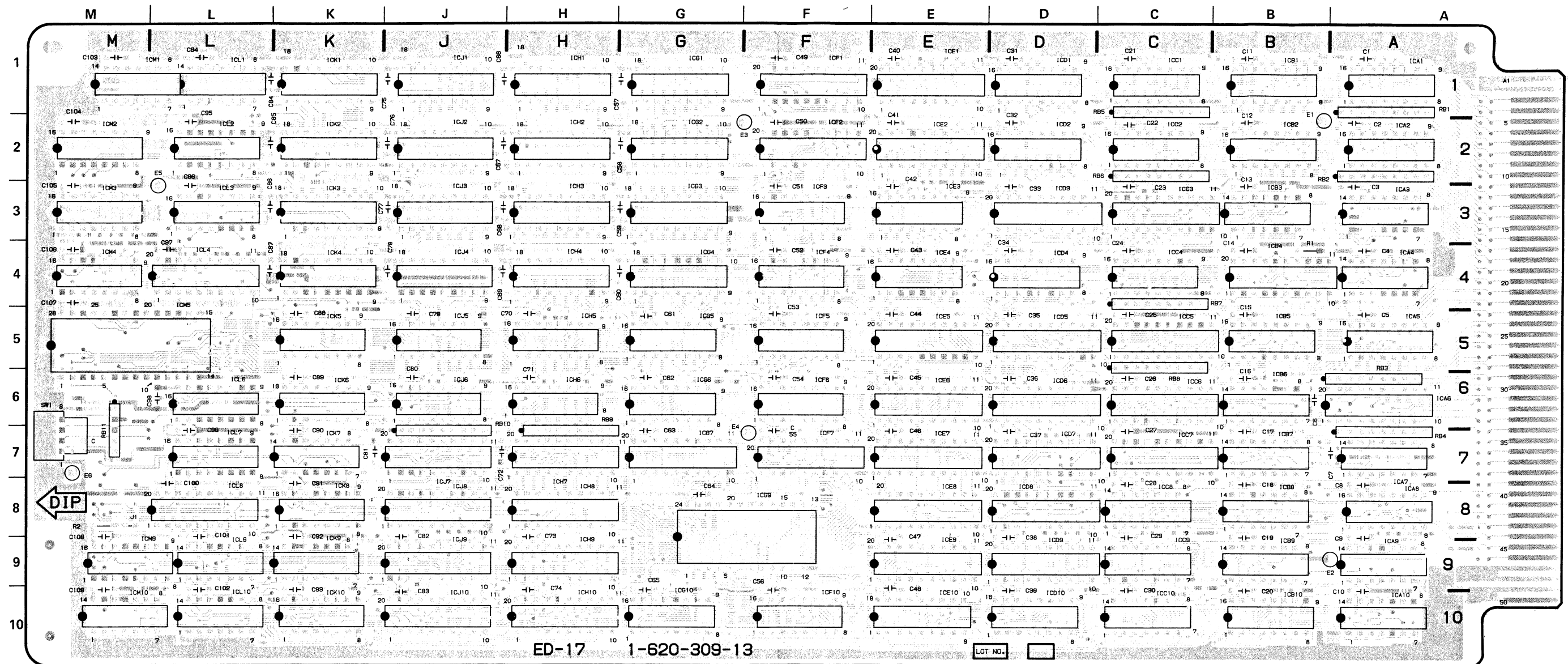
■ SOLDER SIDE PATTERN 1-620-322-13

ED-16 BOARD (1-620-308-14)
Component Side



■ SOLDER SIDE PATTERN

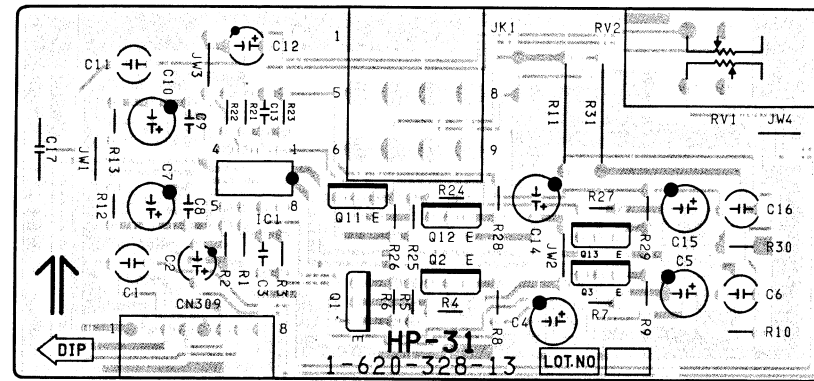
1-620-308-14

ED-17 BOARD (1-620-309-13)
Component Side

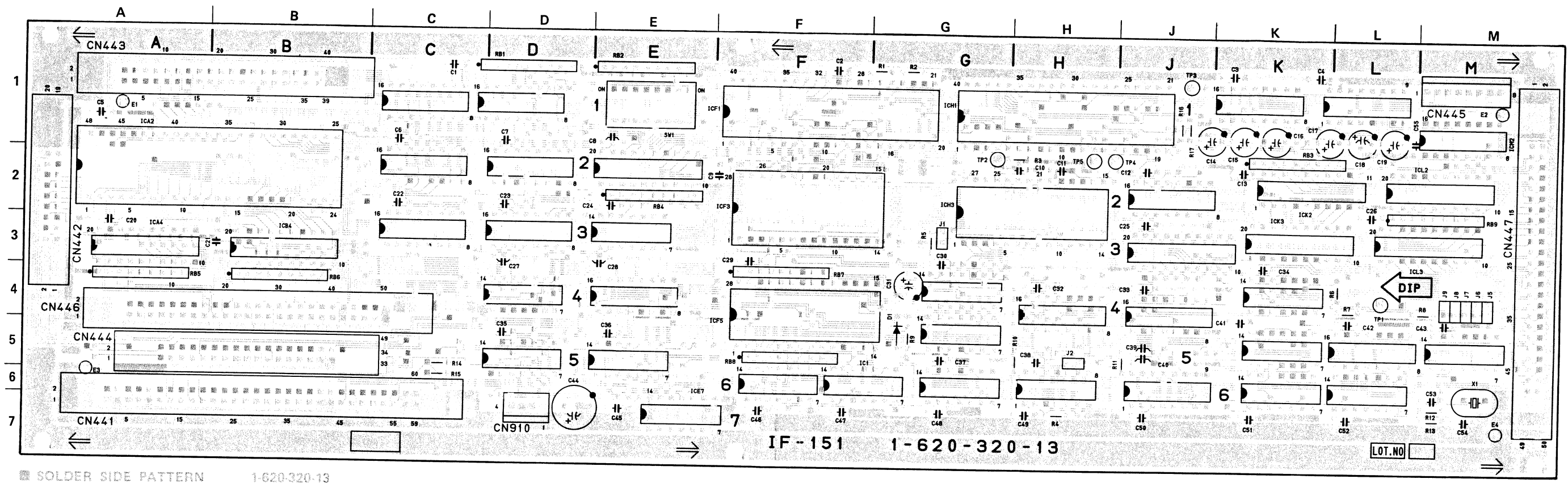
SOLDER SIDE PATTERN

1-620-309-13

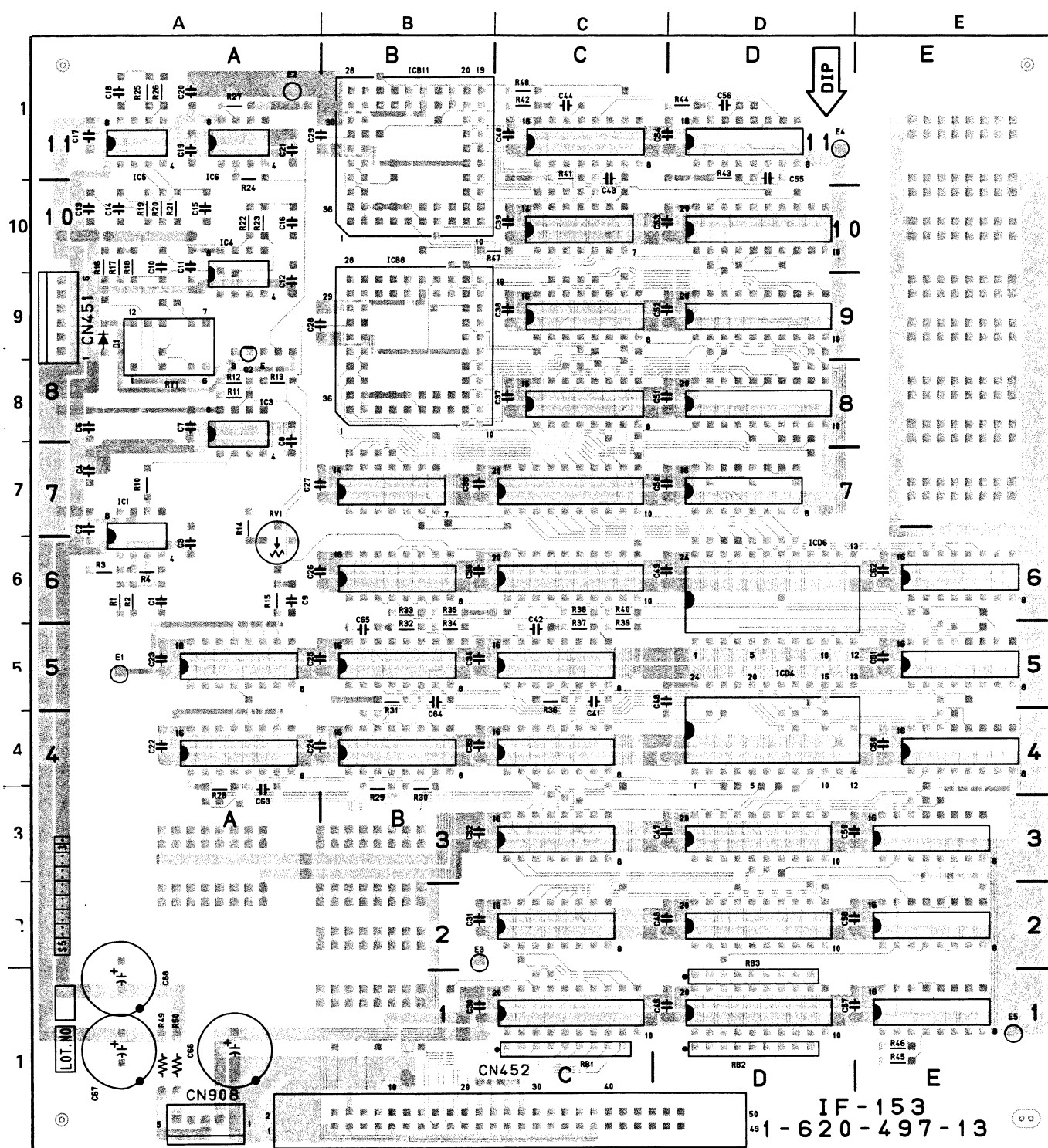
HP-31 BOARD (1-620-328-13)
Component Side



■ SOLDER SIDE PATTERN 1-620-328-13

IF-151 BOARD (1-620-320-13)
Component Side

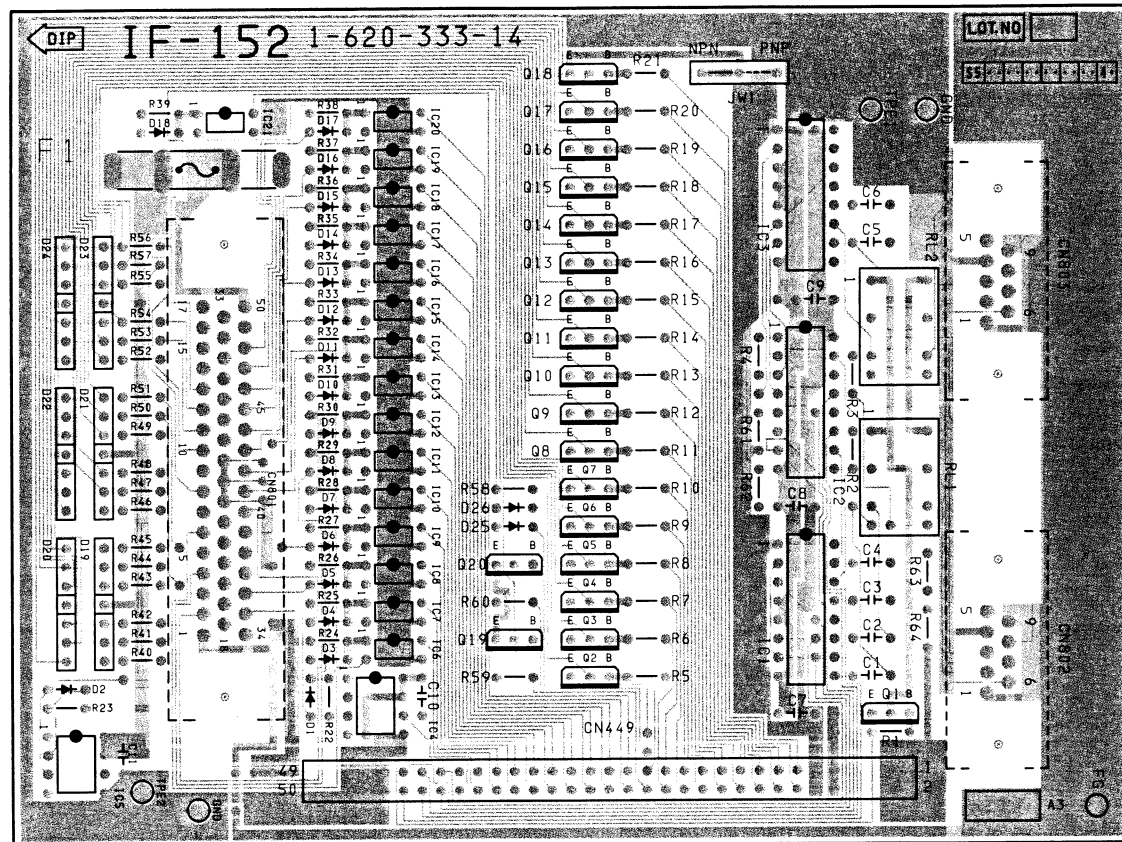
IF-153 BOARD (1-620-497-13)
Component Side



■ SOLDER SIDE PATTERN 1-620-497-13

IF-152 BOARD (1-620-333-14)
Component Side

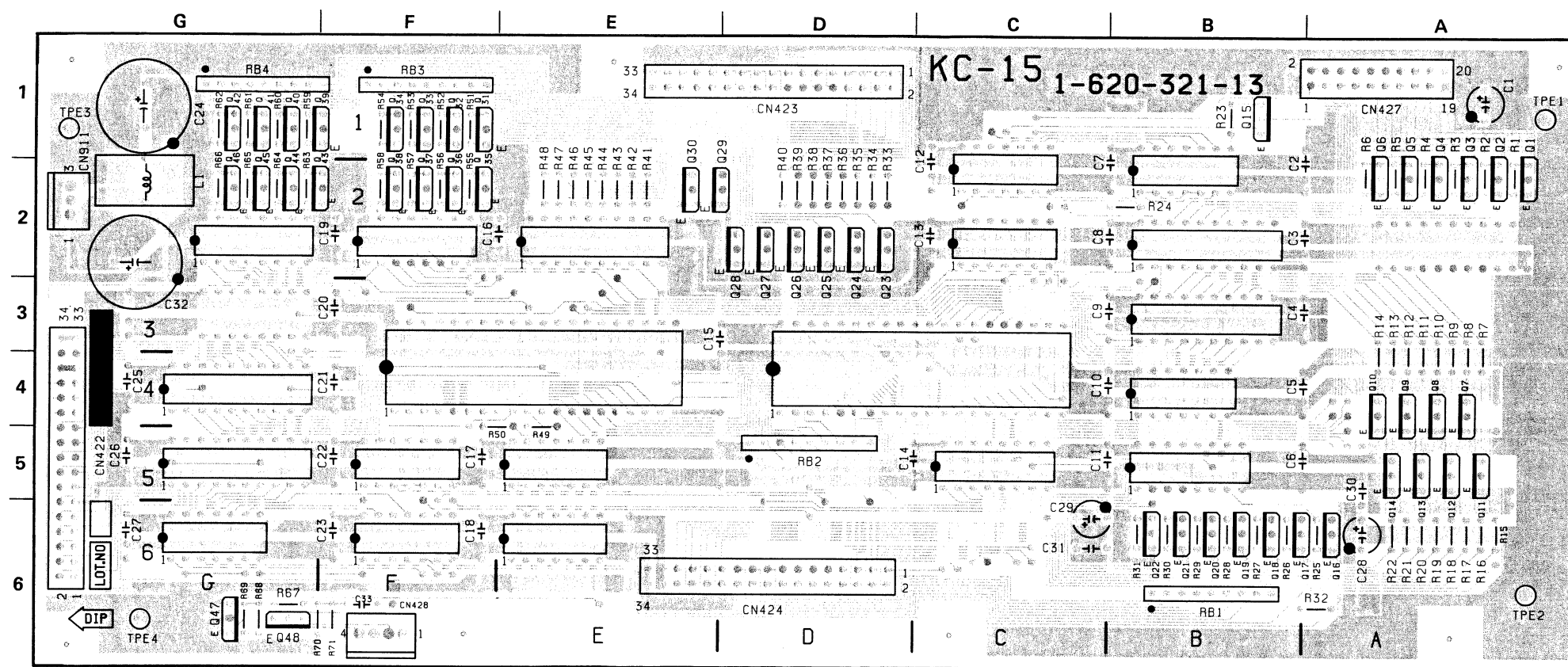
S/N: 10501 AND HIGHER



SOLDER SIDE PATTERN

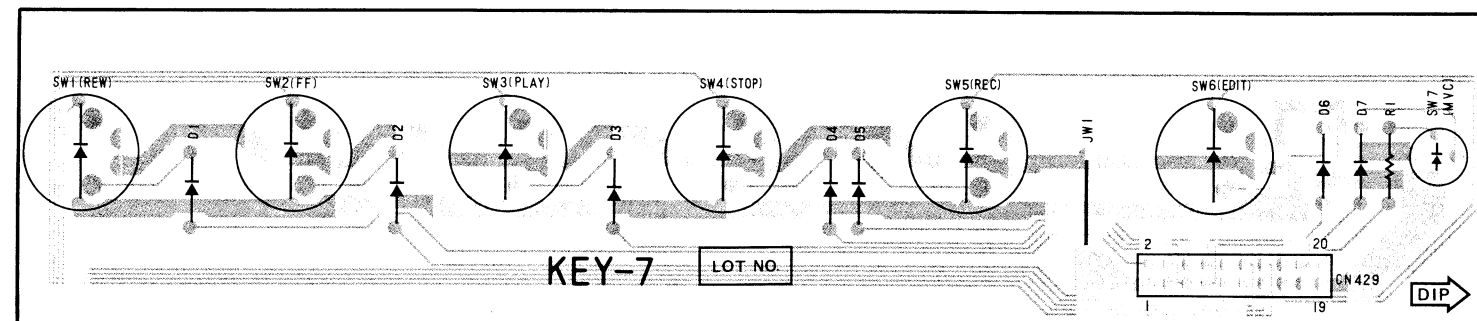
1-620-333-14

KC-15 BOARD (1-620-321-13)
Component Side

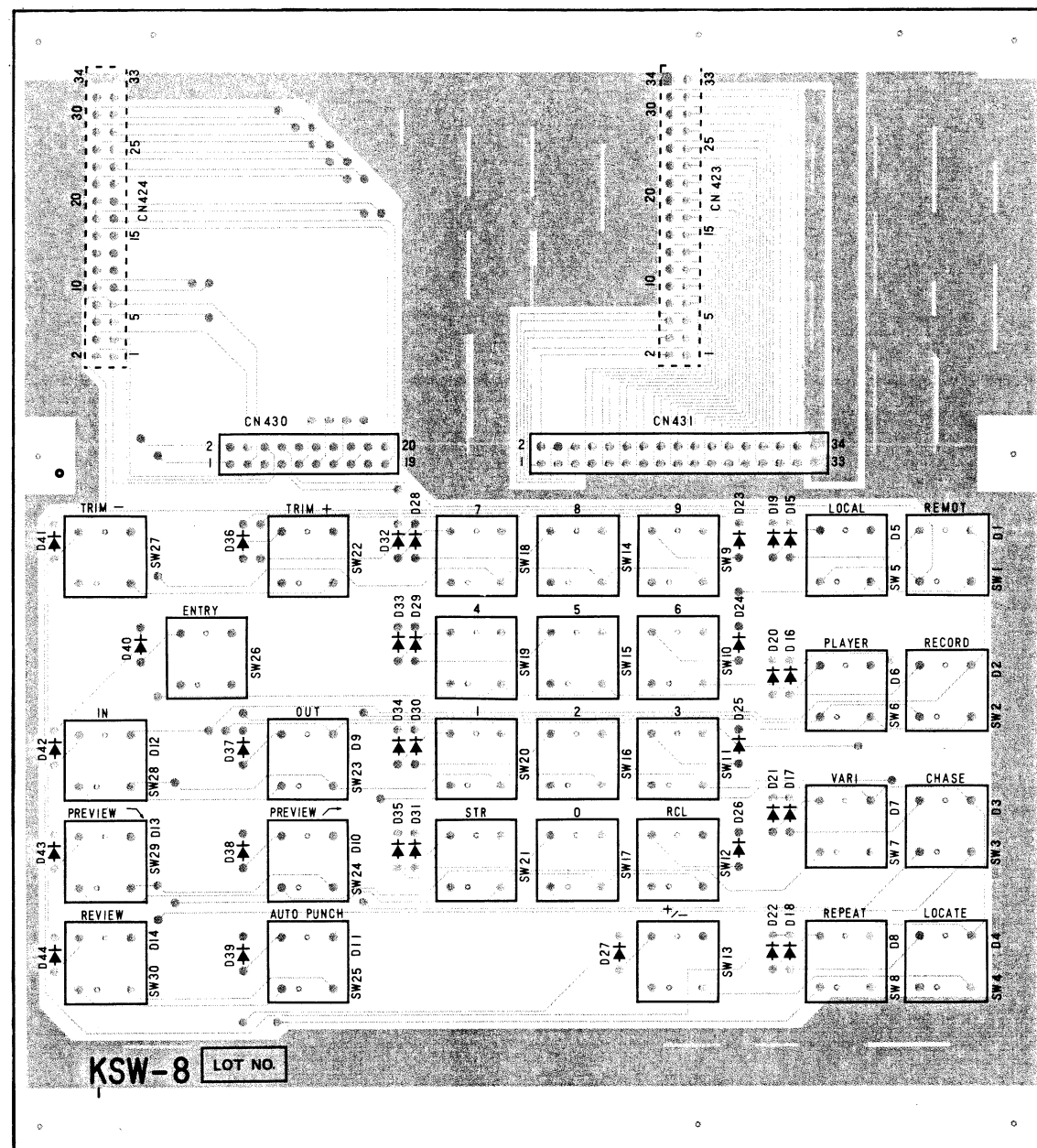


■ SOLDER SIDE PATTERN 1-620-321-13

KEY-7 BOARD (1-620-327-12)
Component Side



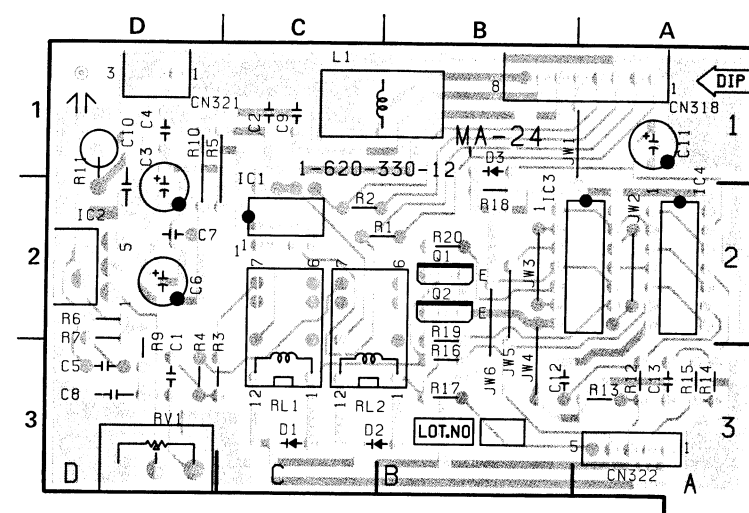
■ SOLDER SIDE PATTERN 1-620-327-12

KSW-8 BOARD (1-620-332-12)
Component Side

SOLDER SIDE PATTERN

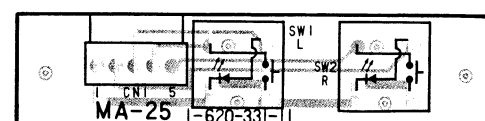
1-620-332-12

MA-24 BOARD (1-620-330-12)
Component Side



■ SOLDER SIDE PATTERN 1-620-330-12

MA-25 BOARD (1-620-331-11)
Component Side

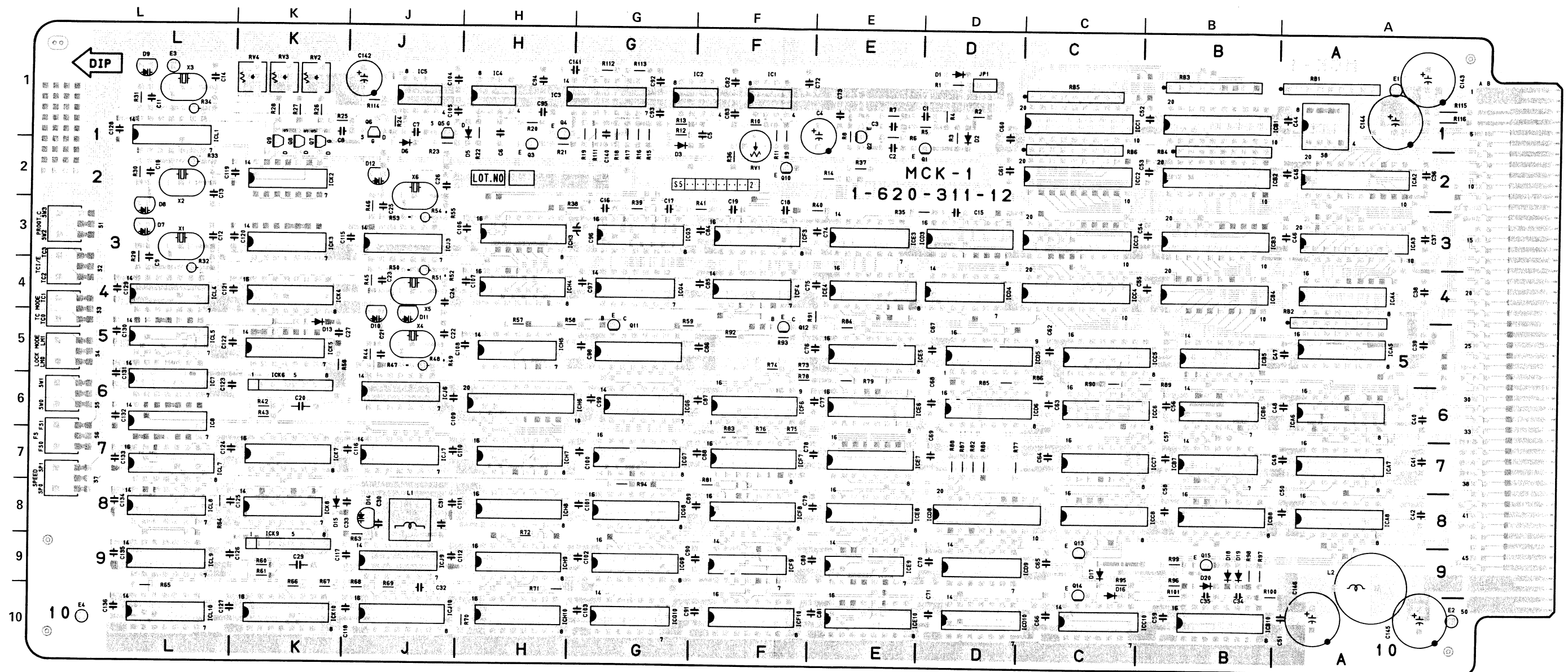


■ SOLDER SIDE PATTERN 1-620-331-11

B-113

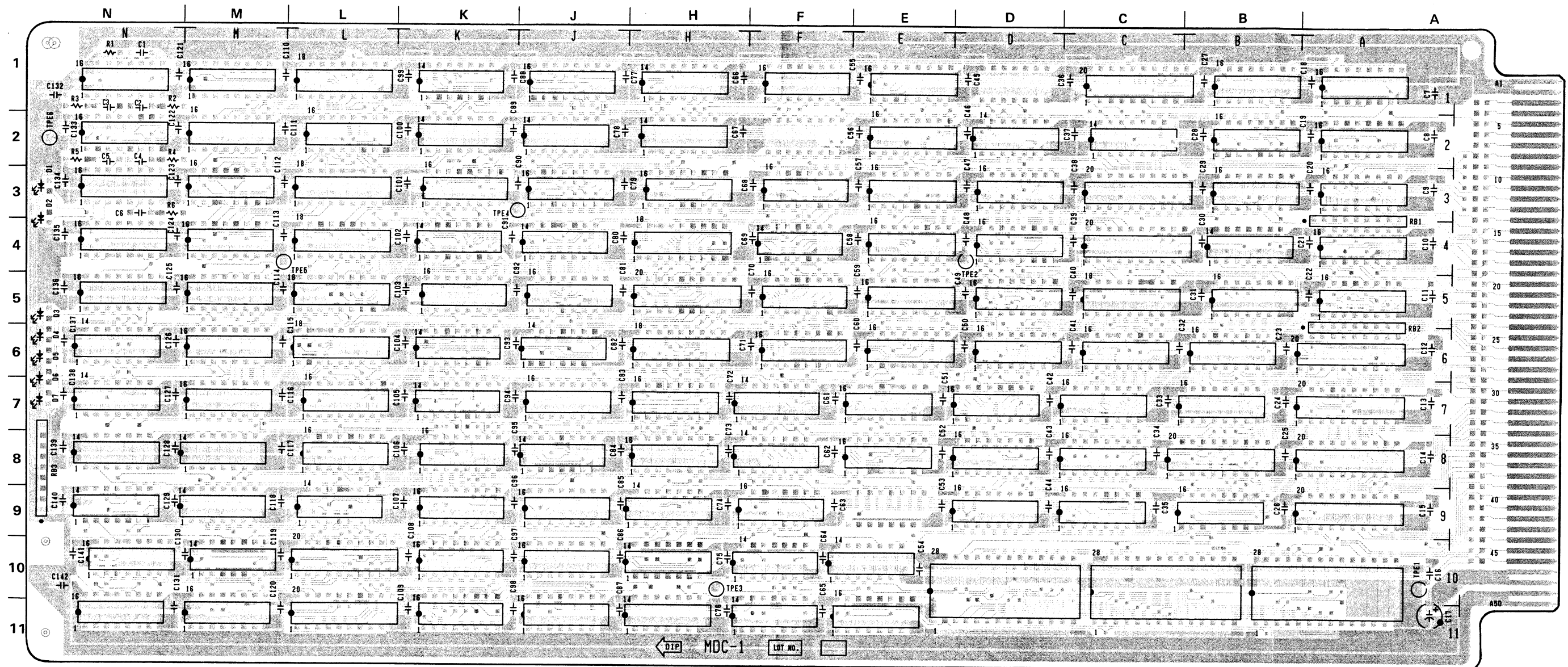
114

MCK-1 BOARD (1-620-311-12)
Component Side



SOLDER SIDE PATTERN

1-620-311-12

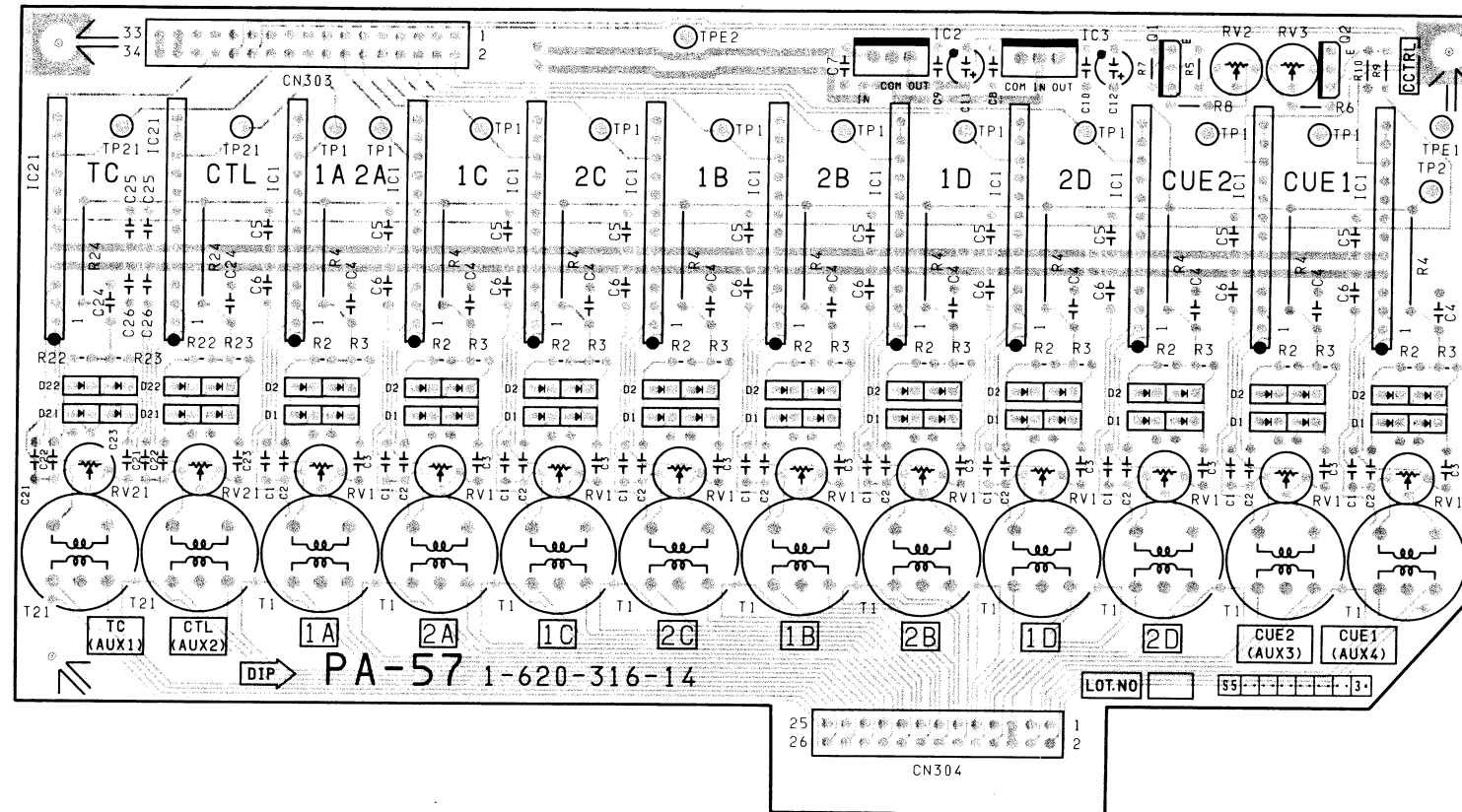
MDC-1 BOARD (1-620-307-13)
Component Side

SOLDER SIDE PATTERN

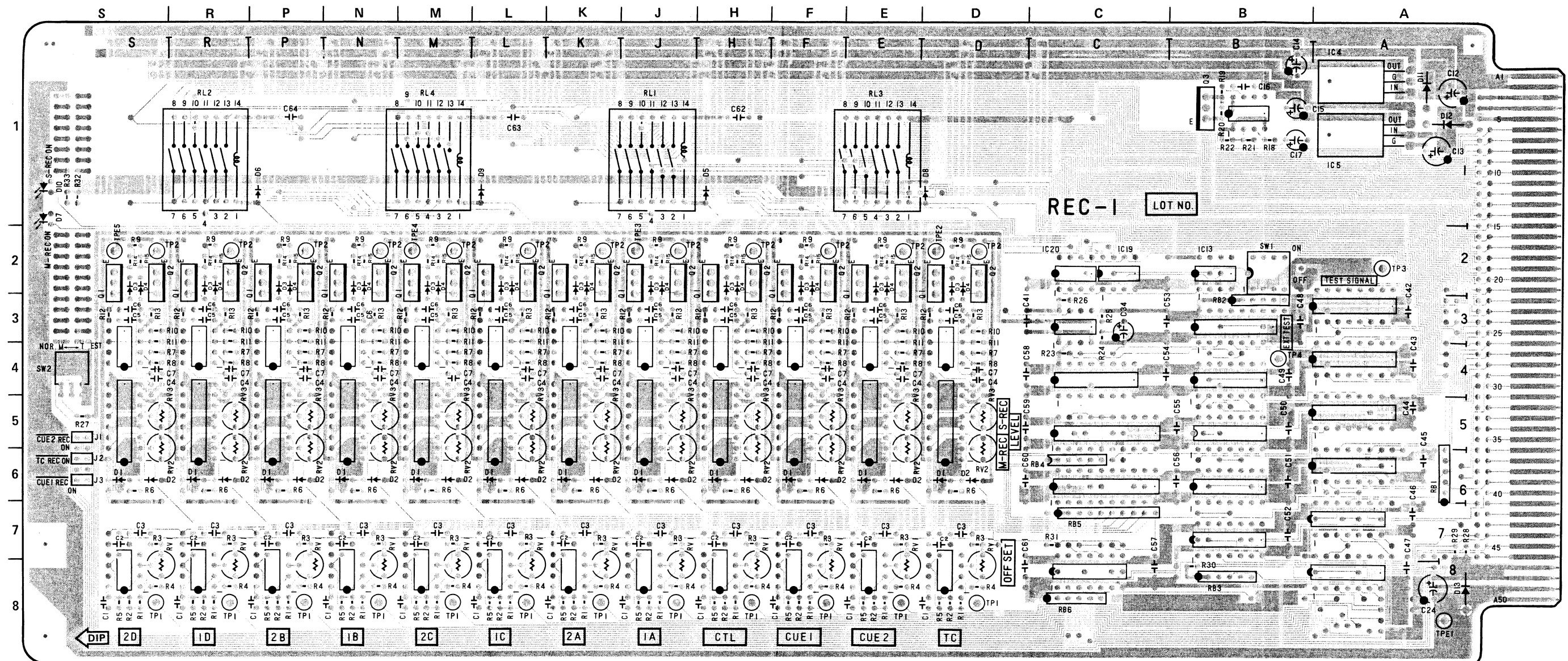
1-620-307-13

■ SOLDER SIDE PATTERN 1-620-306-12

PA-57 BOARD (1-620-316-14)
Component Side

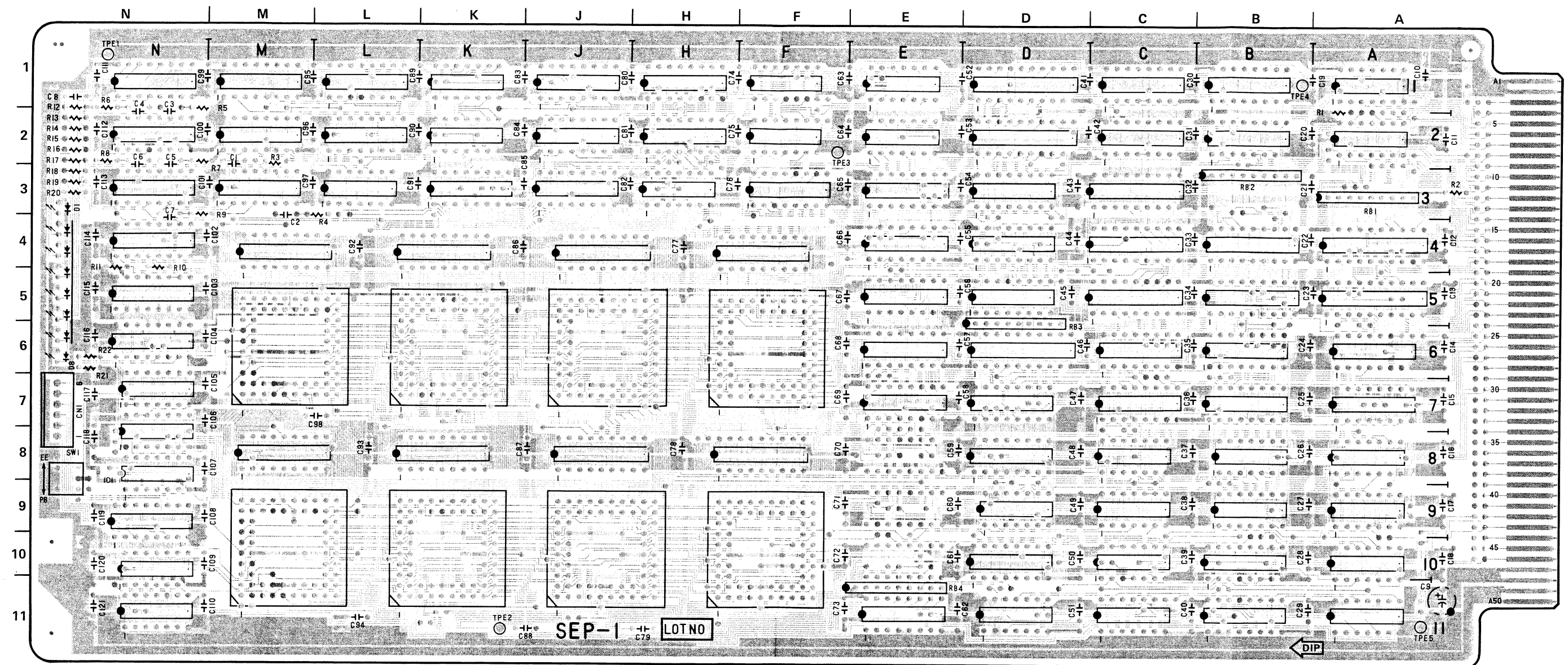


■ SOLDER SIDE PATTERN 1-620-316-14

REC-1 BOARD (1-620-304-12)
Component Side

SOLDER SIDE PATTERN 1-620-304-12

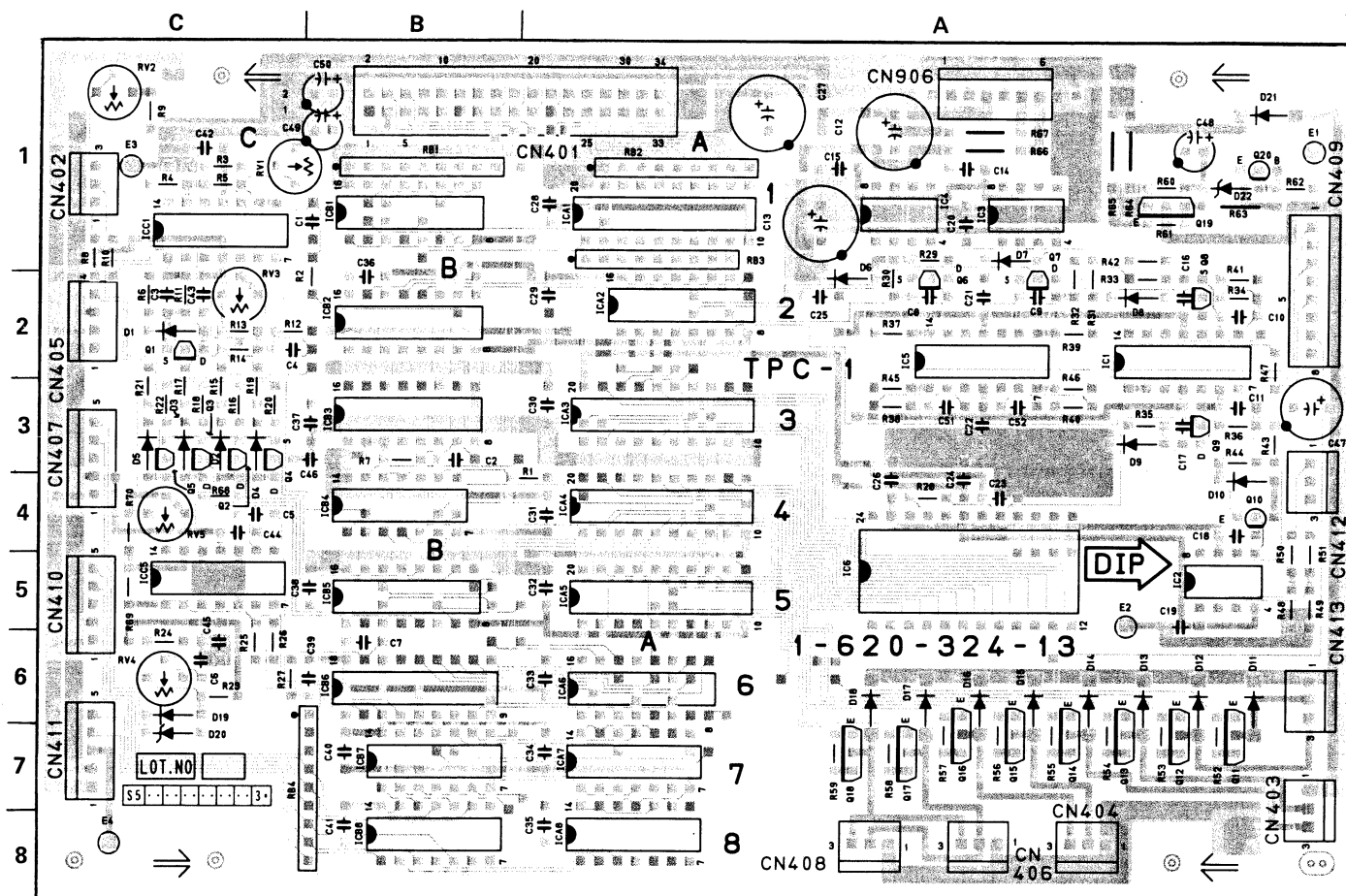
SEP-1 BOARD (1-620-305-12)
Component Side



■ SOLDER SIDE PATTERN

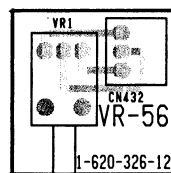
1-620-305-12

TPC-1 BOARD (1-620-324-13)
Component Side



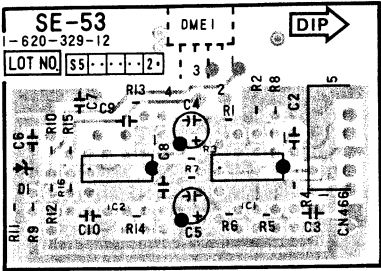
■ SOLDER SIDE PATTERN 1-620-324-13

VR-56 BOARD (1-620-326-12)
Component Side



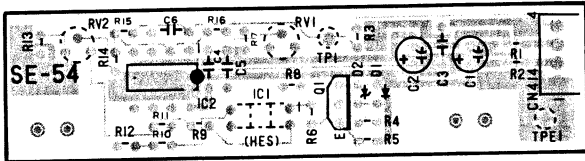
■ SOLDER SIDE PATTERN 1-620-326-12

SE-53 BOARD (1-620-329-12)
Component Side



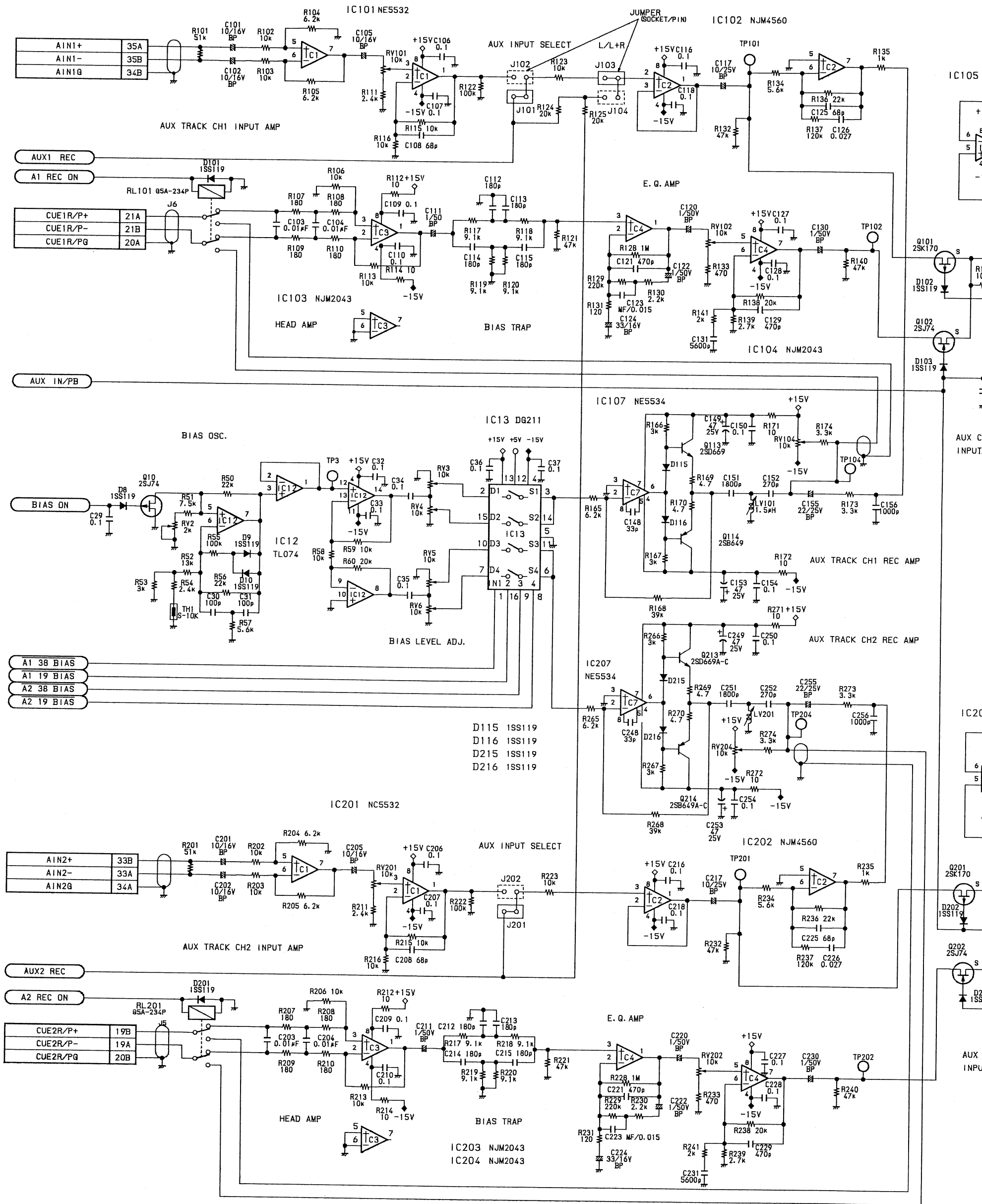
■ SOLDER SIDE PATTERN 1-620-329-12

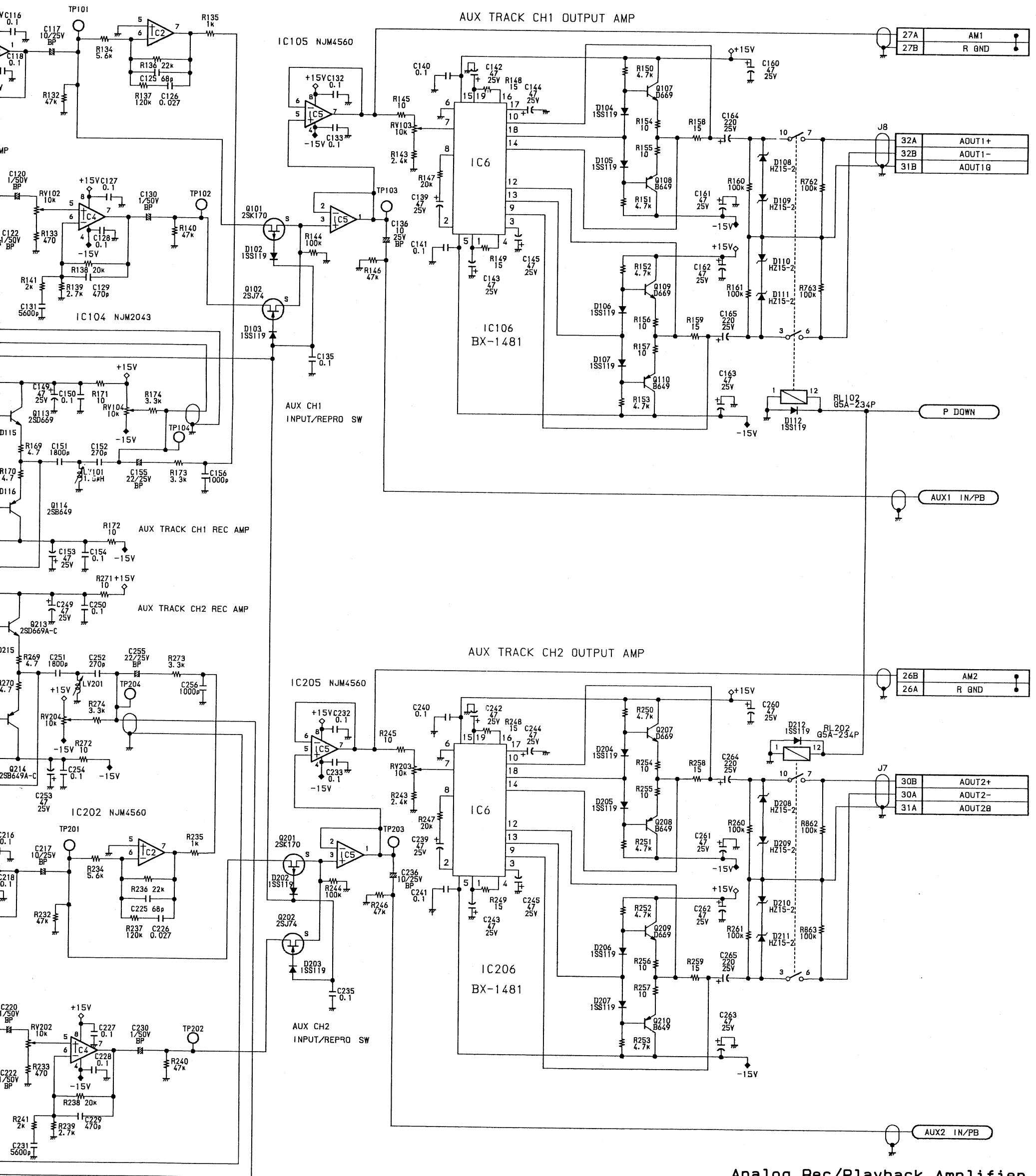
SE-54 BOARD (1-620-334-11)
Component Side



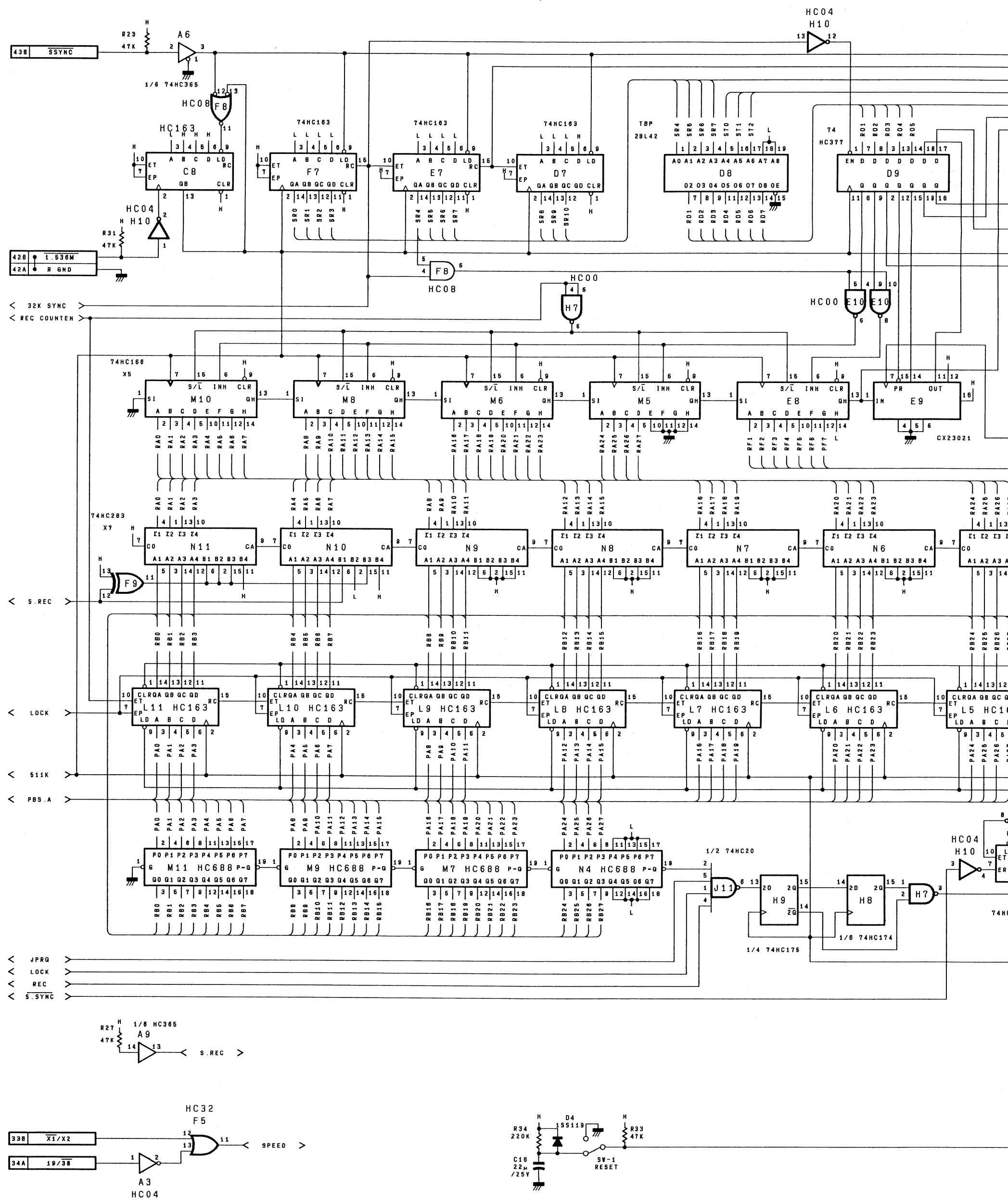
■ SOLDER SIDE PATTERN 1-620-334-11

SECTION C
SCHEMATIC DIAGRAMS



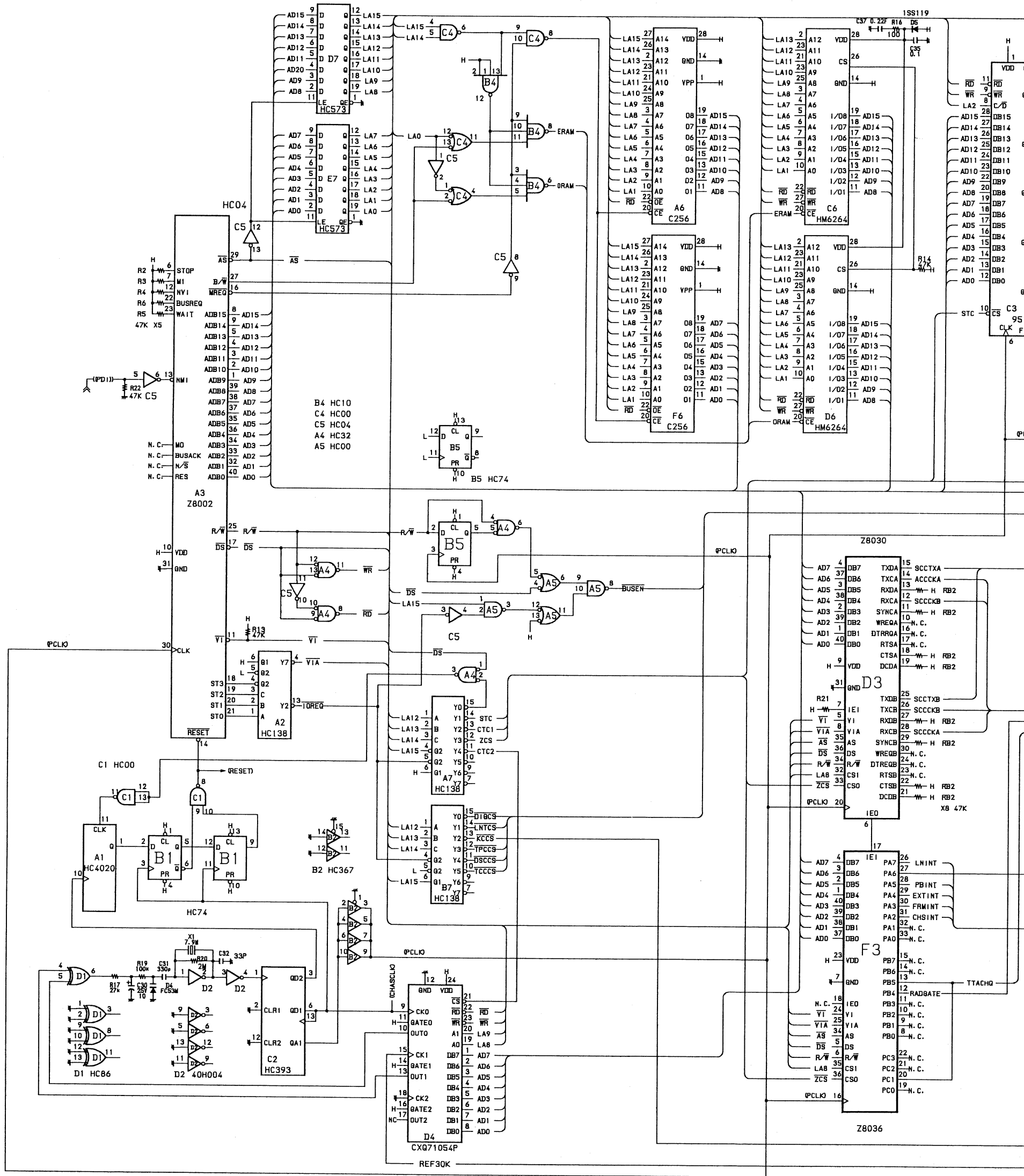


Analog Rec/Playback Amplifier
ARP-1BOARD (2/2)
 BOARD NO.1-620-314-14
 PCM-3402





CTL-1 BOARD (1/2)
BOARD NO. 1-620-310-12
PCM-3402





D301 1SS119
D302 1SS119
D303 1SS119
D304 1SS119

CH1 LINE INPUT AMP

DA CH1-	10B
DA CH1+	10A
DA CH1G	11B

LIN 1+	41A
LIN 1-	41B
LIN 1G	40B

AD CH1+	43A
AD CH1-	43B
AD CH1G	44B

B PD1	17B
CTRL3	7B

DA CH2-	12B
DA CH2+	12A
DA CH2G	11A

LIN 2+	39B
LIN 2-	39A
LIN 2G	40A

AD CH2+	45A
AD CH2-	45B
AD CH2G	44A

CTRL5	6B
CTRL4	6A
CTRL2	7A
CTRL1	8B
CTRL0	8A
19/38	25A

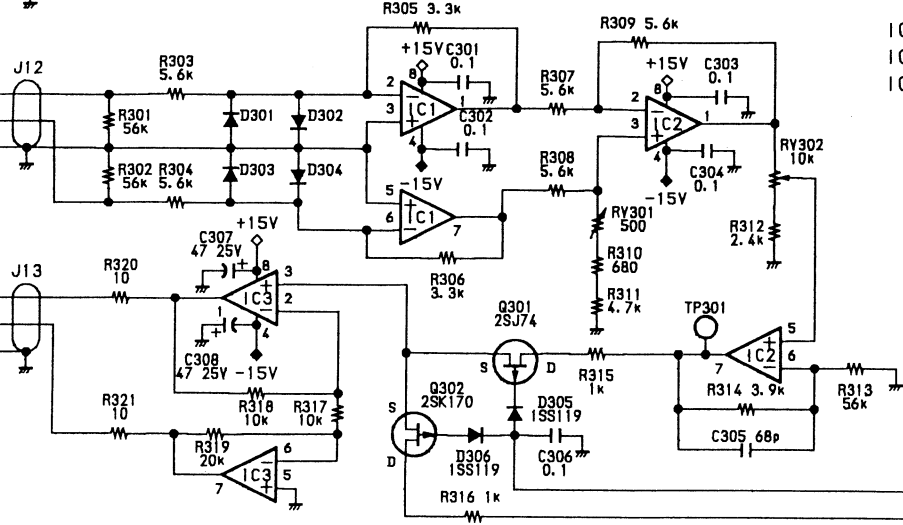
PB TC	23B
R GND	23A

TC R/P +	17A
TC R/P -	18A
TC R/P G	18B

REC TC	24A
R GND	24B

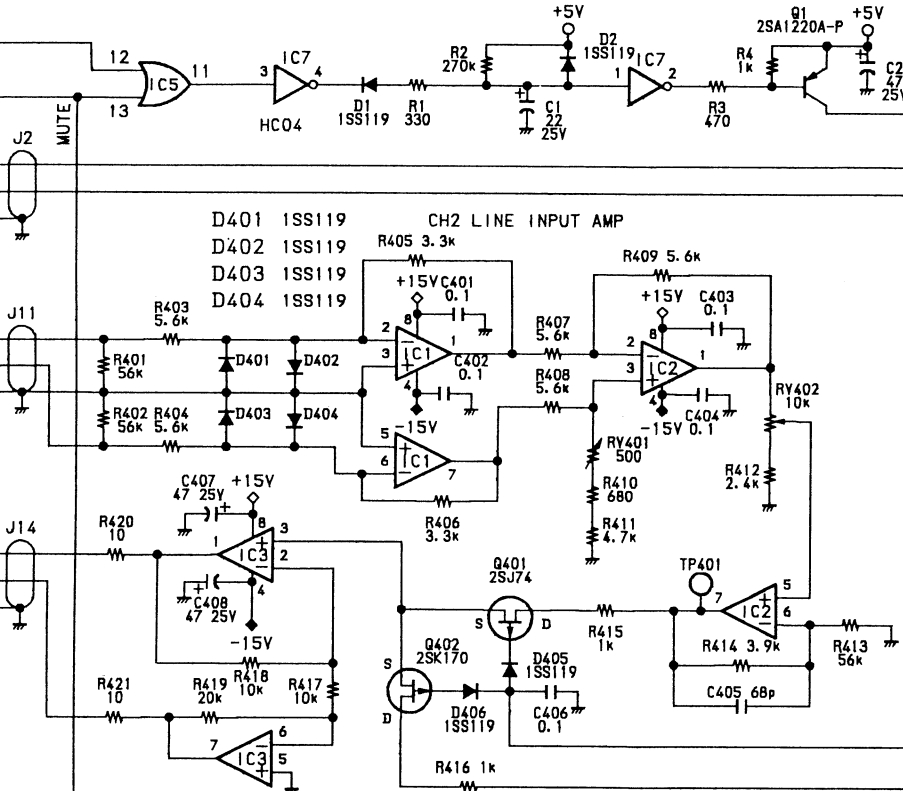
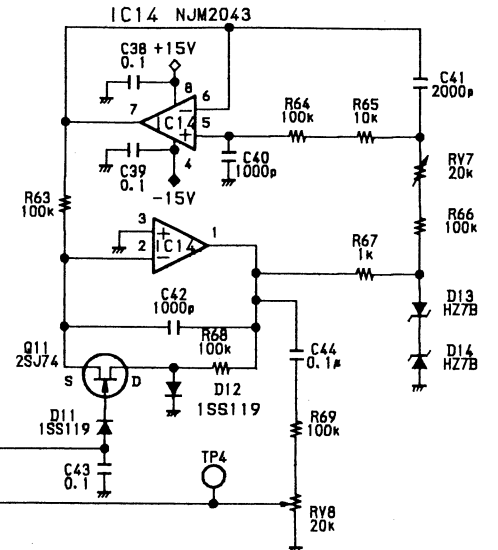
A GND	1A
A GND	1B
A GND	2A
A GND	2B
+15V	3A
+15V	3B
-15V	4A
-15V	4B

+5V	47A
+5V	47B
+5V	48A
+5V	48B
GND	49A
GND	49B
GND	50A
GND	50B

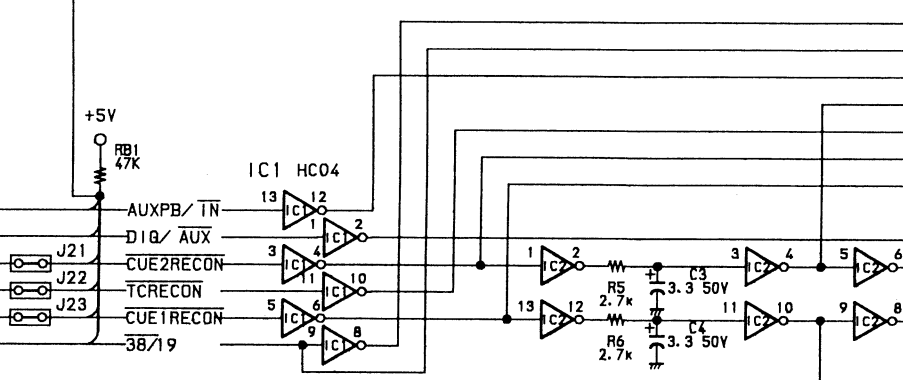


IC301 NE5532
IC302 NE5532
IC303 NE5532

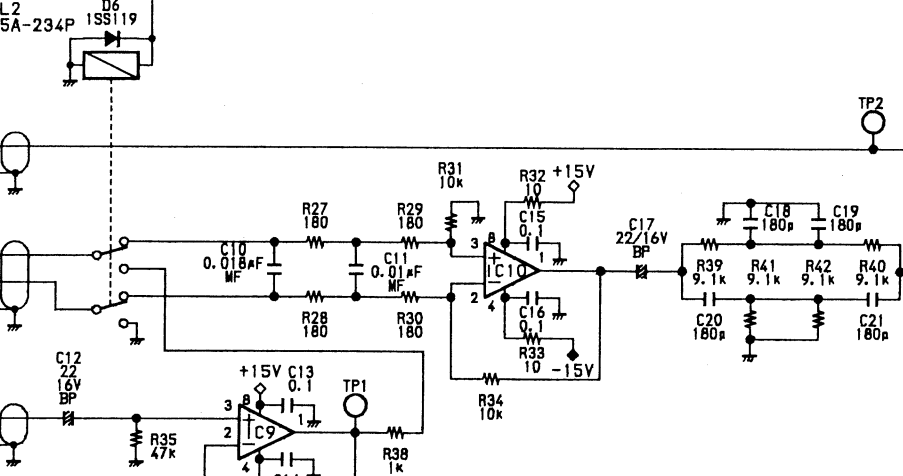
AUDIO TEST SIGNAL OSC.



IC401 NE5532
IC402 NE5532
IC403 NE5532

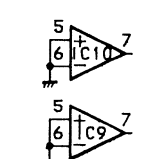


AUX TRACK REC ON TIMING CONTROL

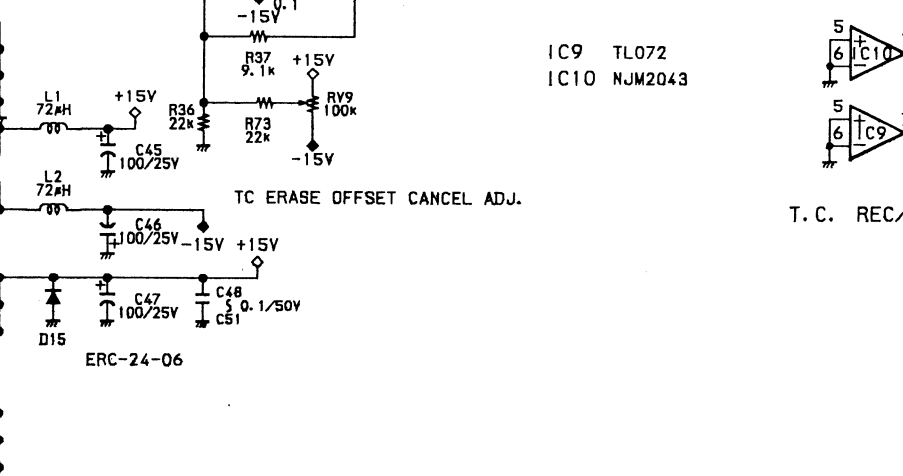
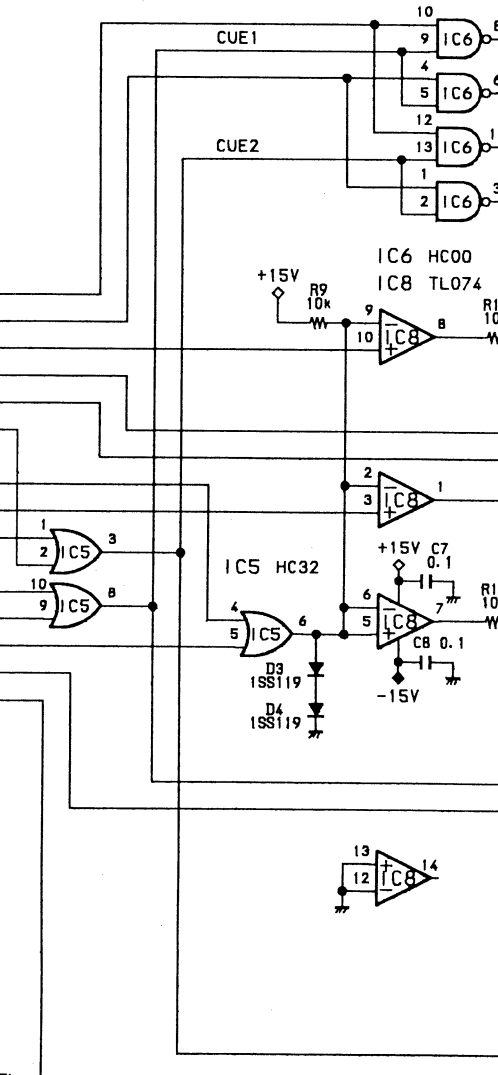


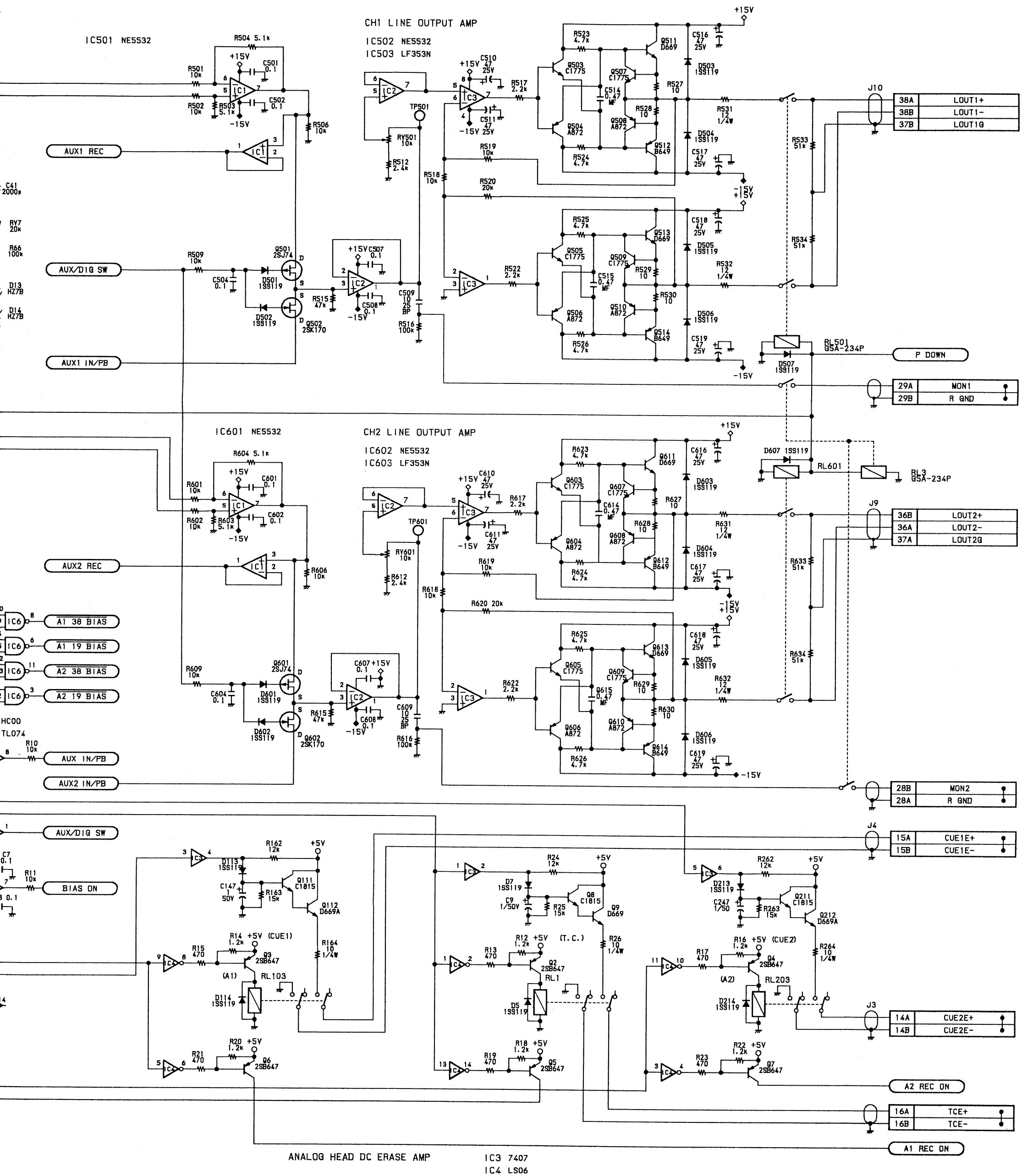
IC9 TL072
IC10 NJM2043

T.C. REC/PB



IC11 TL072

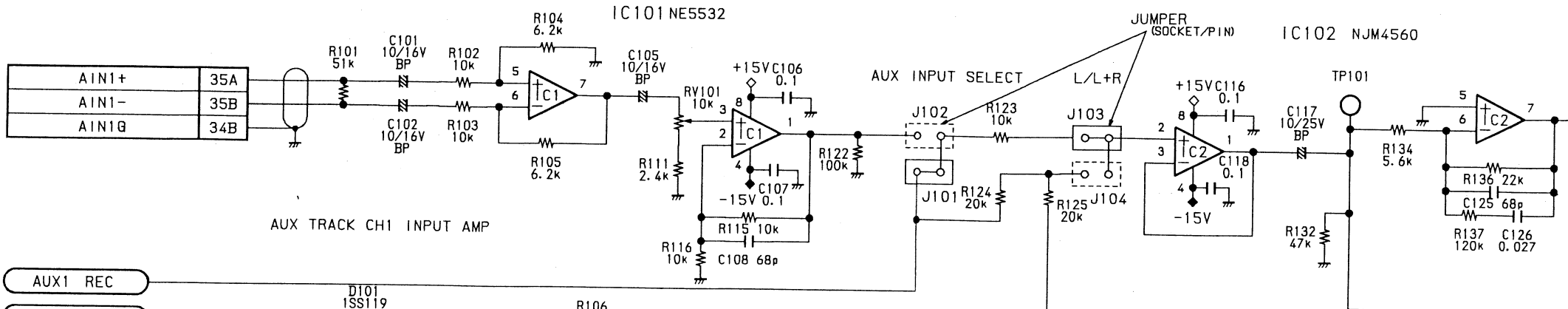




Anglog Rec/Playback Amplifier
ARP-1 BOARD (1/2)
 BOARD NO. 1-620-314-13
 PCM-3402

IC101 NE5532

IC102 NJM4560



AUX1 REC

A1 REC ON

CUE1R/P+ 21A
CUE1R/P- 21B
CUE1R/PB 20A

IC103 NJM2043

HEAD AMP

BIAS TRAP

E. Q. AMP

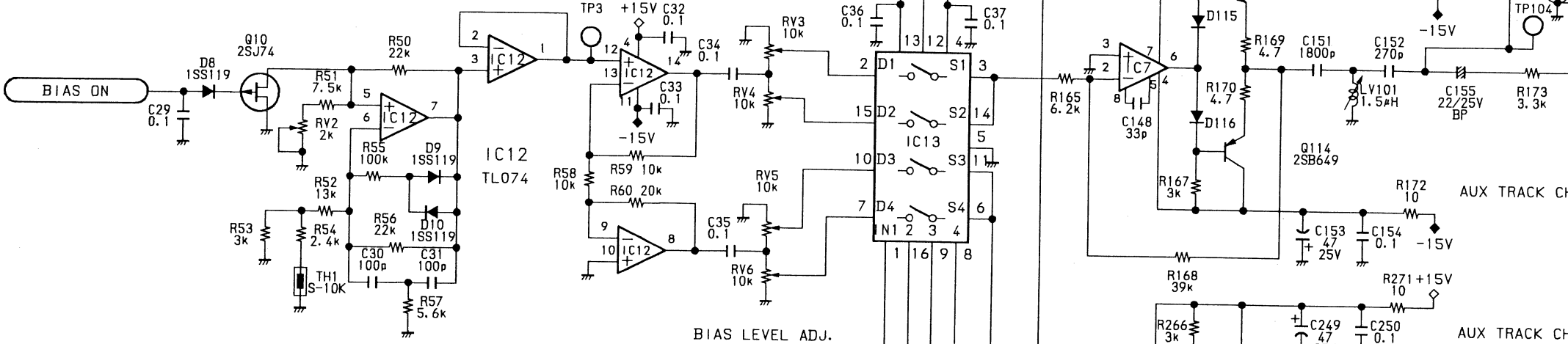
IC104 NJM2043

AUX IN/PB

BIAS OSC.

IC13 DG211

IC107 NE5534



BIAS ON

A1 38 BIAS

A1 19 BIAS

A2 38 BIAS

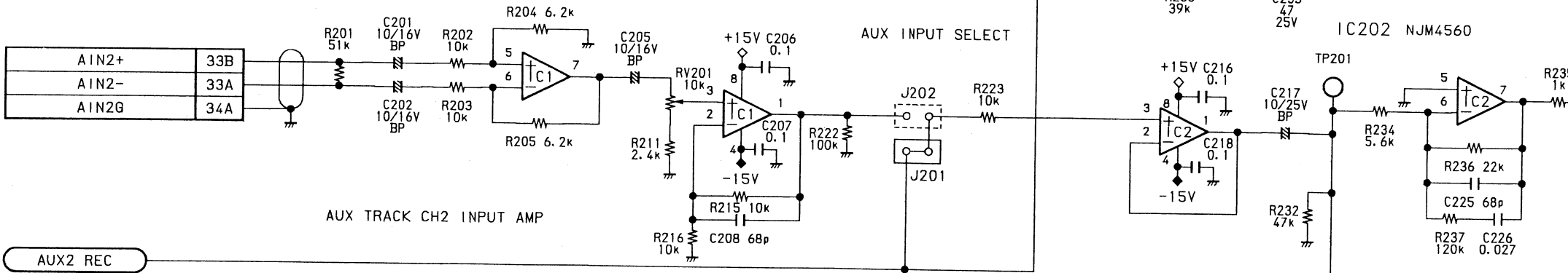
A2 19 BIAS

D115 ISS119
D116 ISS119
D215 ISS119
D216 ISS119

IC201 NC5532

AUX INPUT SELECT

IC202 NJM4560



AUX2 REC

A2 REC ON

CUE2R/P+ 19B
CUE2R/P- 19A
CUE2R/PB 20B

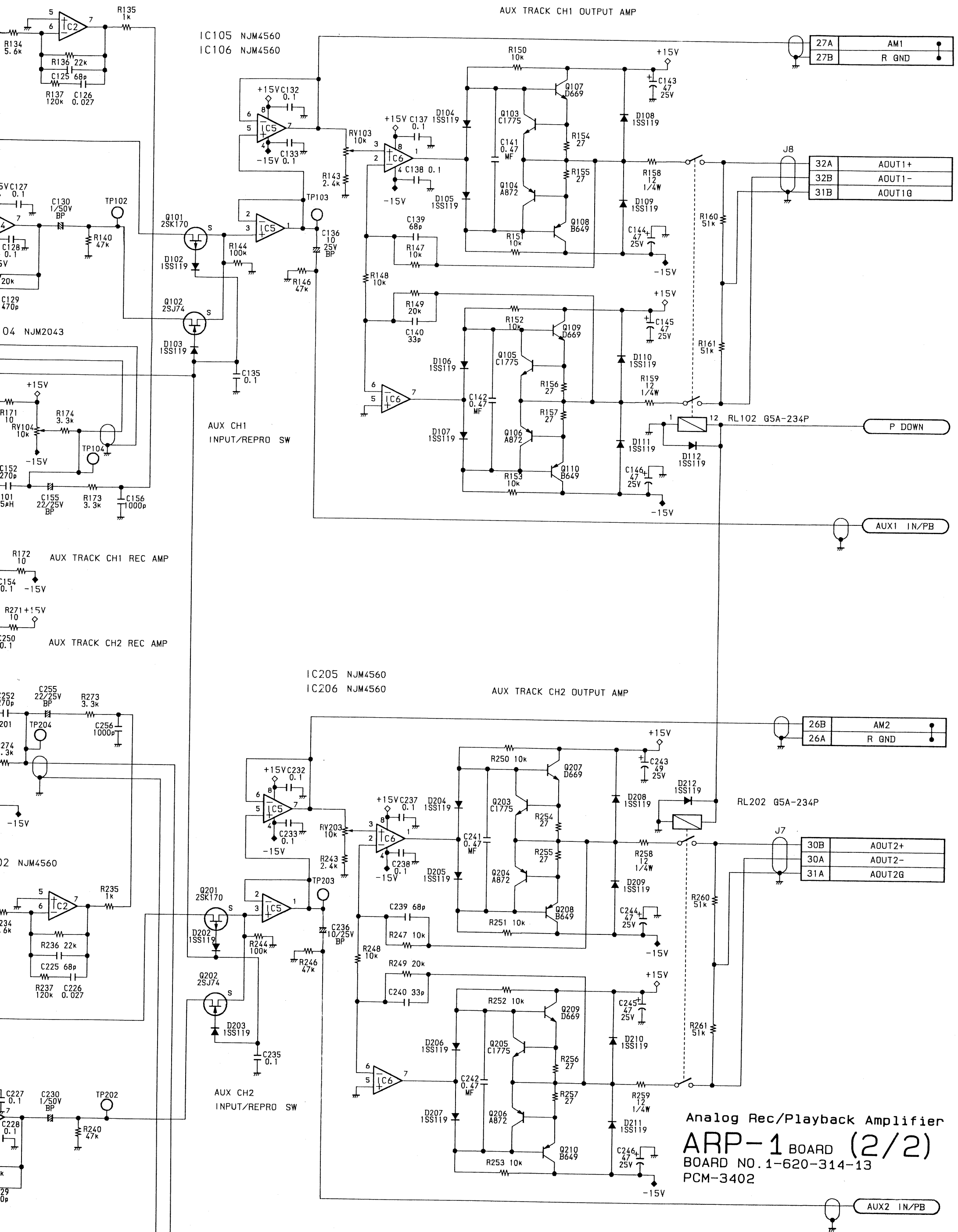
HEAD AMP

BIAS TRAP

E. Q. AMP

IC203 NJM2043
IC204 NJM2043

TP201



D301 1SS119
D302 1SS119
D303 1SS119
D304 1SS119

CHI LINE INPUT AMP

DA CH1-	10B
DA CH1+	10A
DA CH1G	11B

LIN 1+	41A
LIN 1-	41B
LIN 1G	40B

AD CH1+	43A
AD CH1-	43B
AD CH1G	44B

B PD1	17B
CTRL3	7B

DA CH2-	12B
DA CH2+	12A
DA CH2G	11A

LIN 2+	39B
LIN 2-	39A
LIN 2G	40A

AD CH2+	45A
AD CH2-	45B
AD CH2G	44A

CTRL5	6B
CTRL4	6A
CTRL2	7A
CTRL1	8B
CTRL0	8A
19/38	25A

PB TC	23B
R GND	23A

TC R/P +	17A
TC R/P -	18A
TC R/P G	18B

REC TC	24A
R GND	24B

A GND	1A
A GND	1B
A GND	2A
A GND	2B
+15V	3A
+15V	3B
-15V	4A
-15V	4B

+5V	47A
+5V	47B
+5V	48A
+5V	48B
GND	49A
GND	49B
GND	50A
GND	50B

IC301 NE5532
IC302 NE5532
IC303 NE5532

AUDIO TEST SIGNAL OSC.

AUX1 REC

AUX/DIG SW

AUX1 IN/PB

AUX2 REC

A1 38 BIAS

A1 19 BIAS

A2 38 BIAS

A2 19 BIAS

AUX IN/PB

AUX2 IN/PB

AUX/DIG SW

BIAS ON

AUX TRACK REC ON TIMING CONTROL

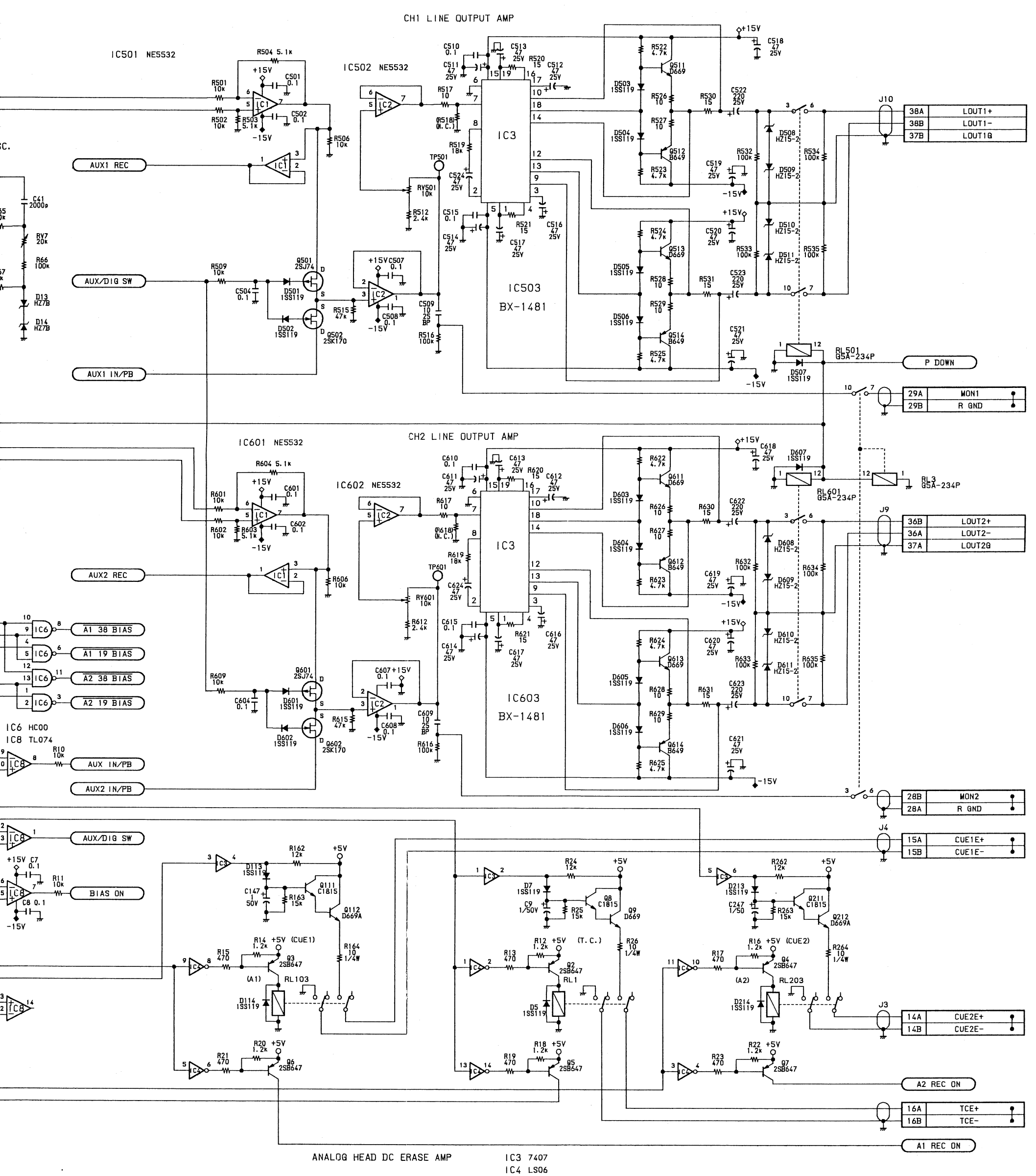
IC9 TL072
IC10 NJM2043

T.C. REC/PB

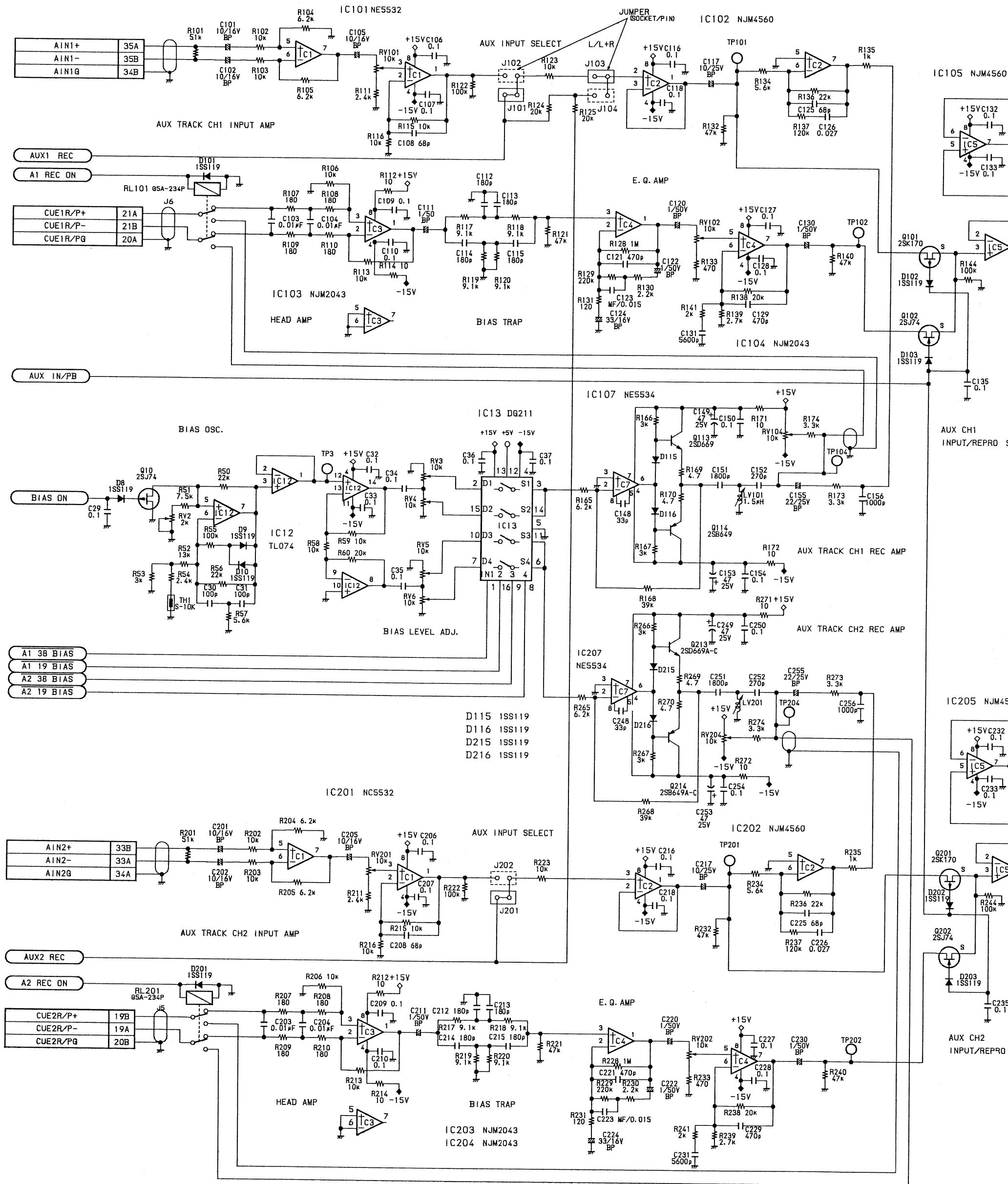
TC ERASE OFFSET CANCEL ADJ.

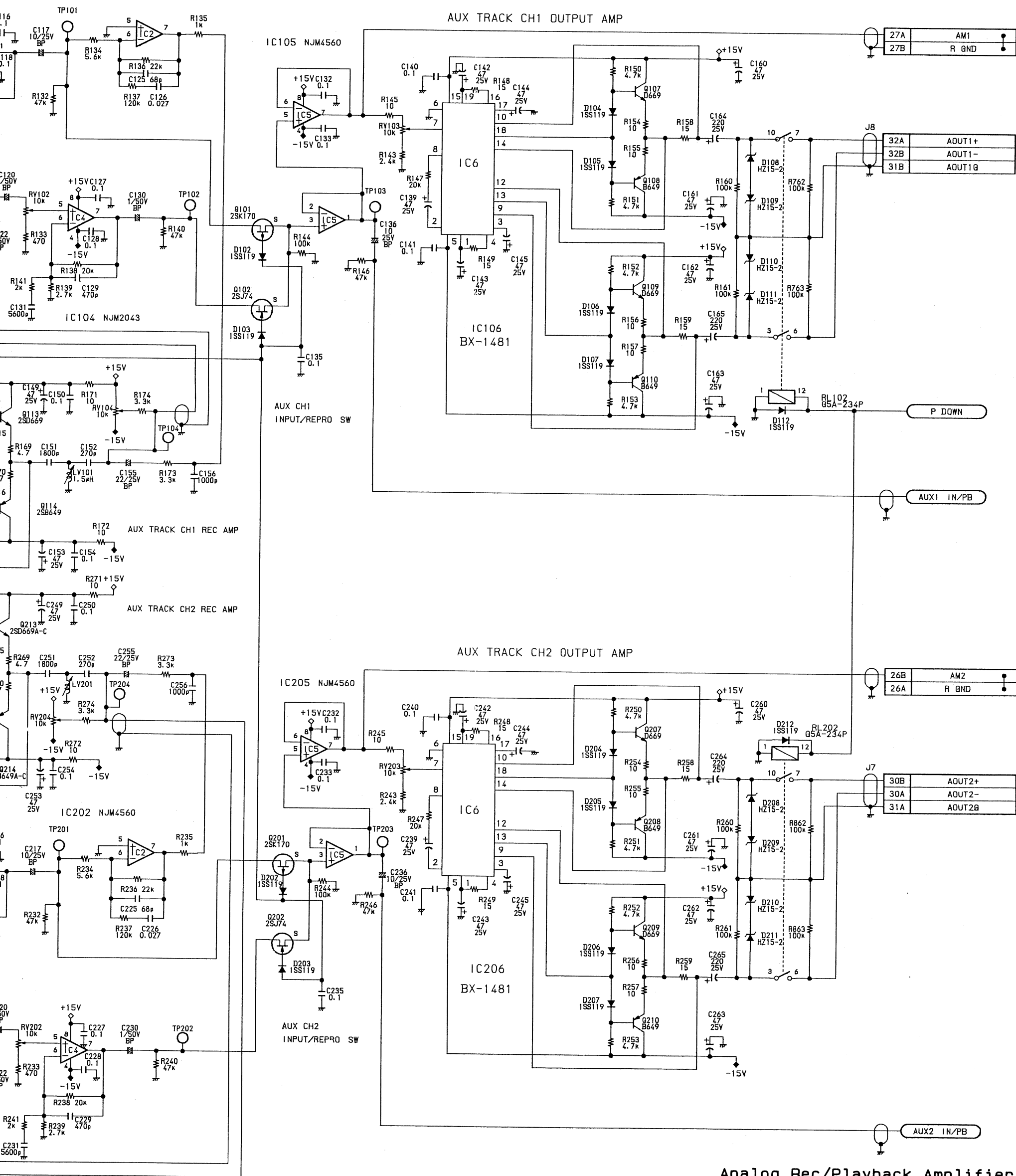
TC PB LEVEL

ERC-24-06

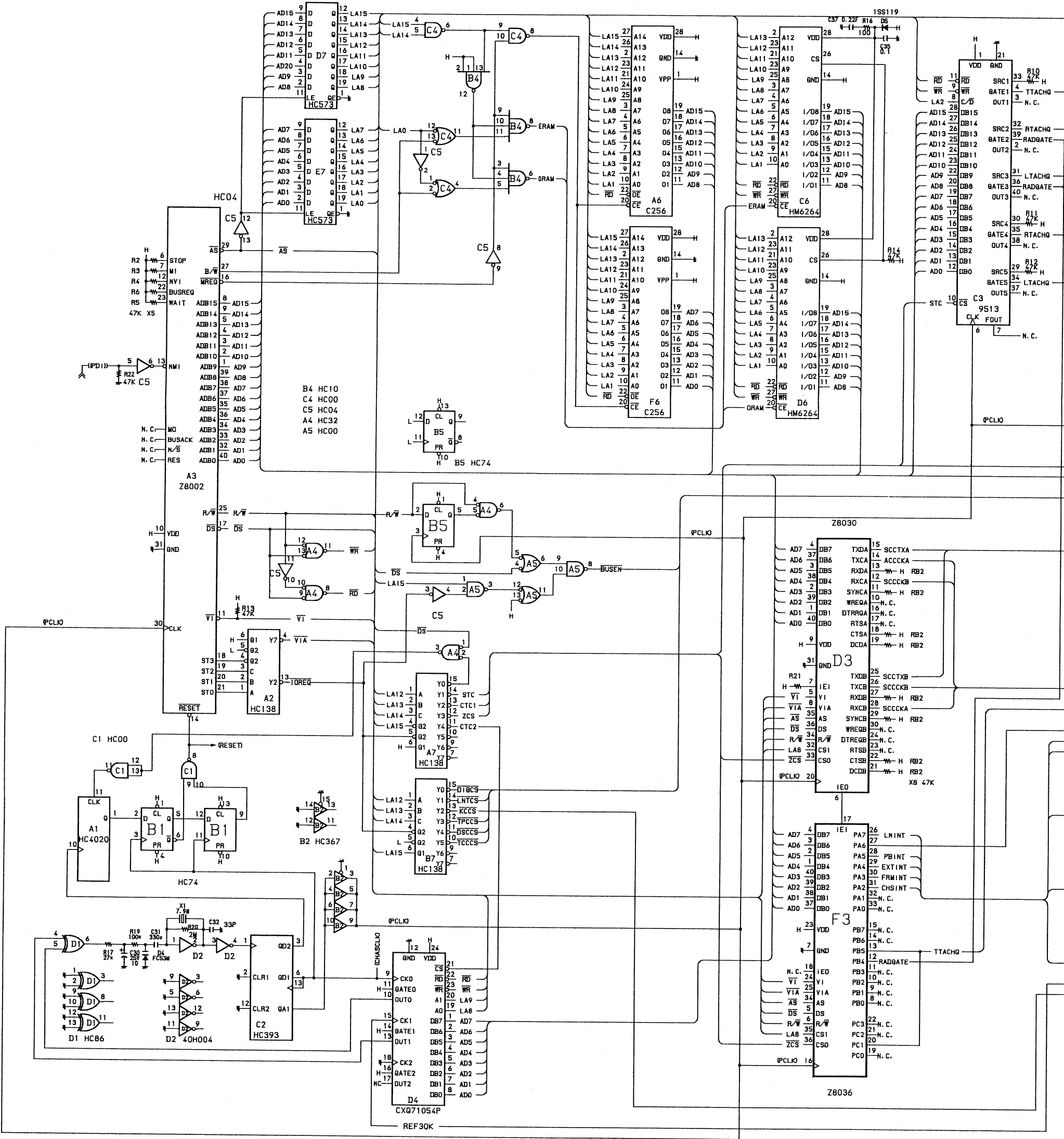


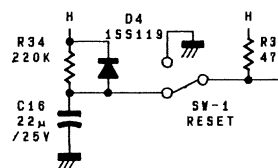
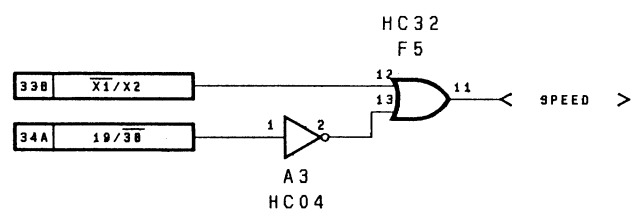
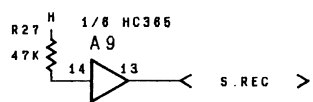
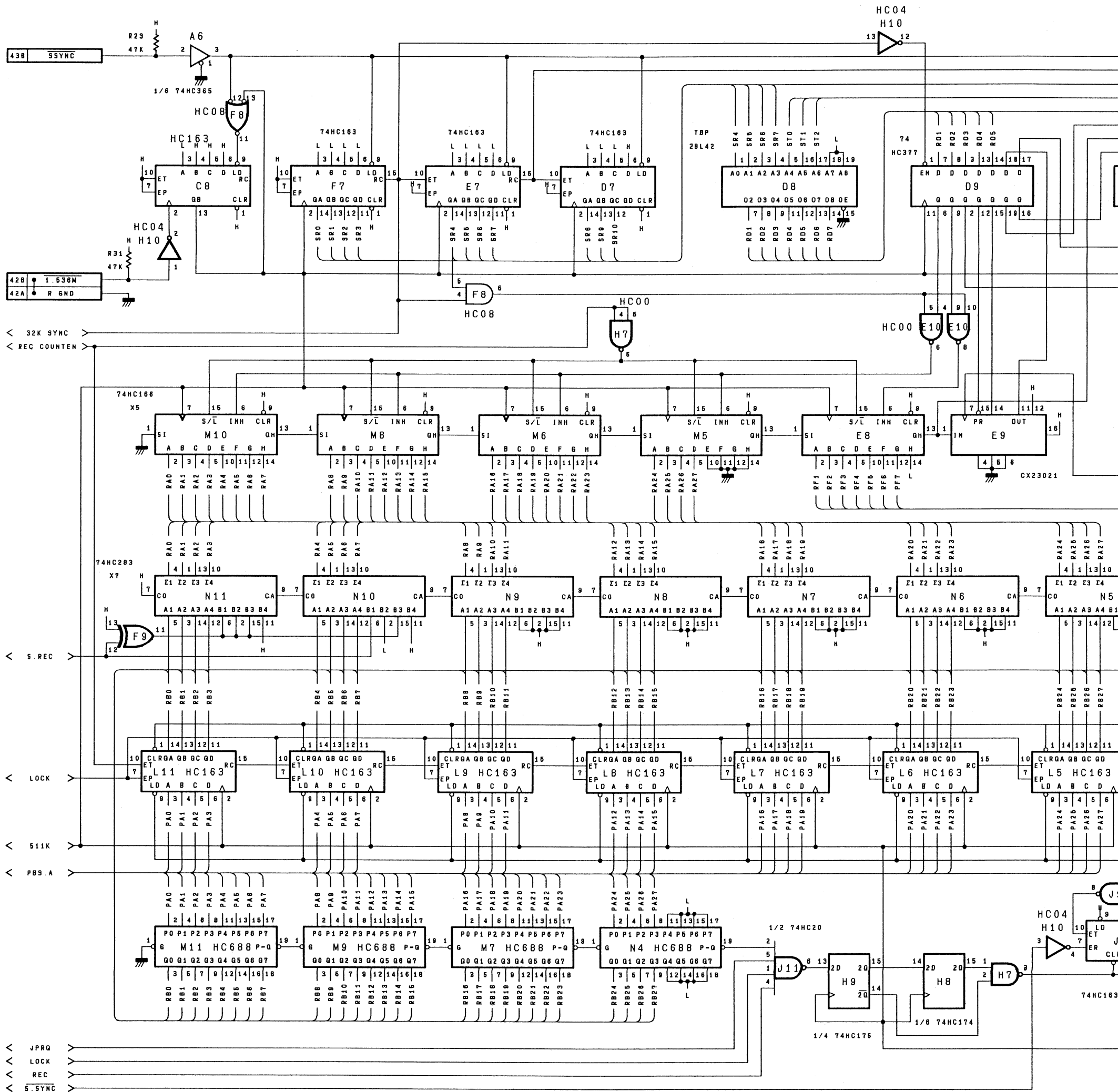
Analog Rec/Playback Amplifier
ARP-1_{BOARD} (1/2)
 BOARD NO. 1-620-314-14
 PCM-3402

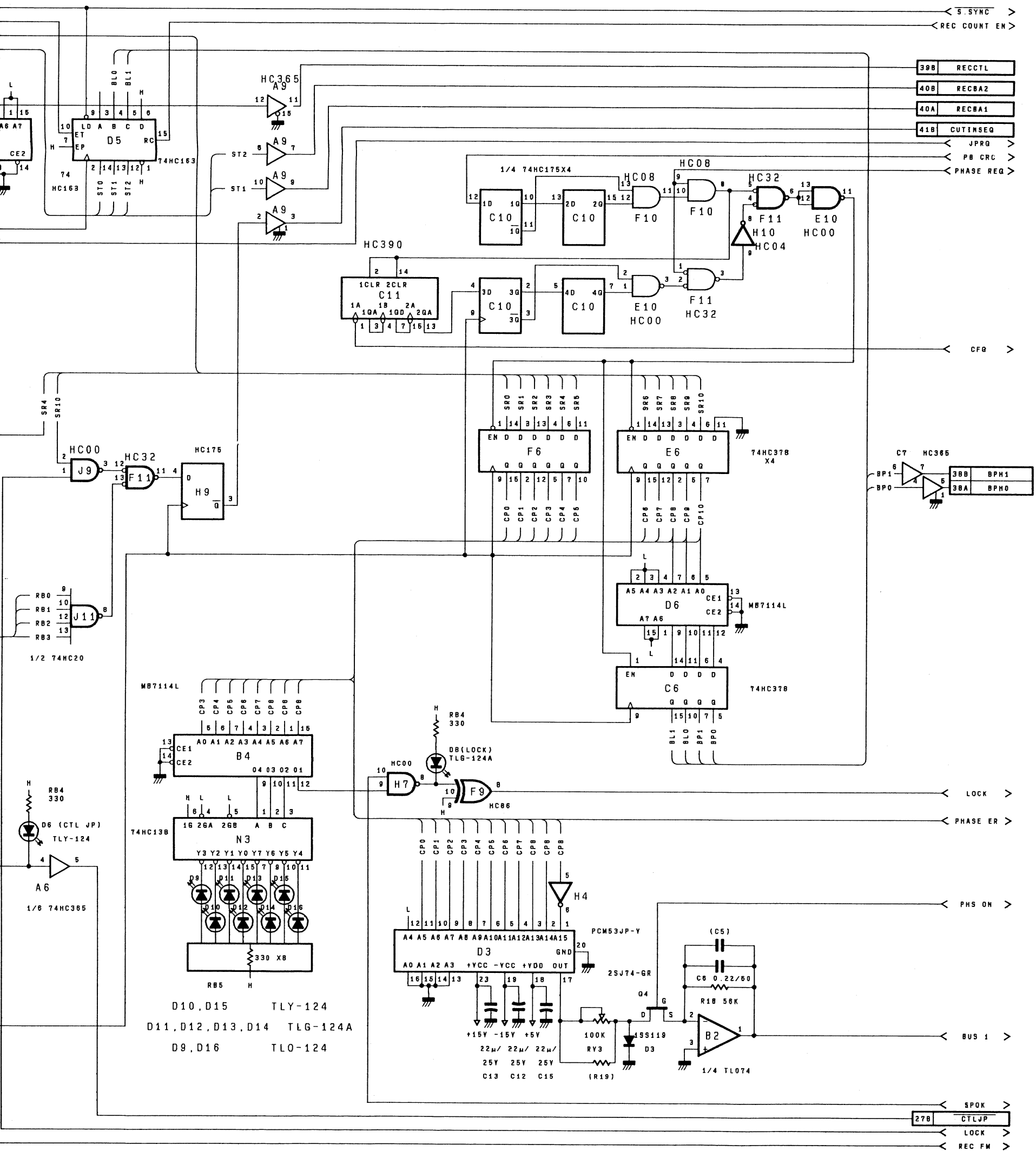




Analog Rec/Playback Amplifier
ARP-1_{BOARD} (2/2)
 BOARD NO.1-620-314-14
 PCM-3402

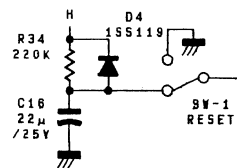
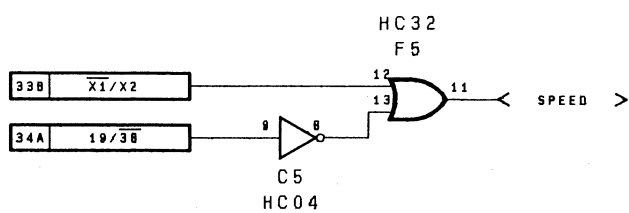
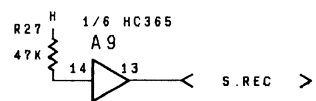
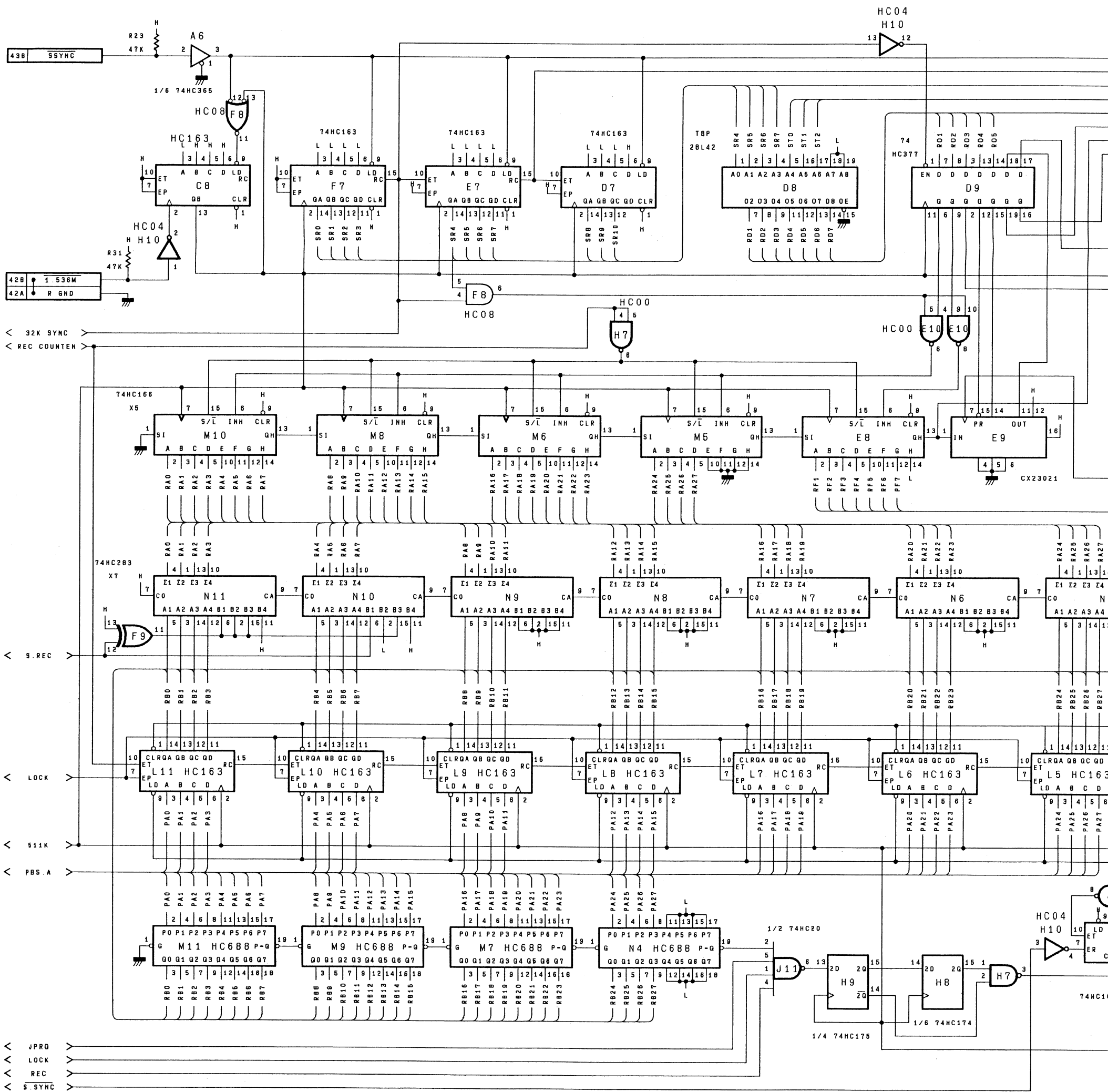


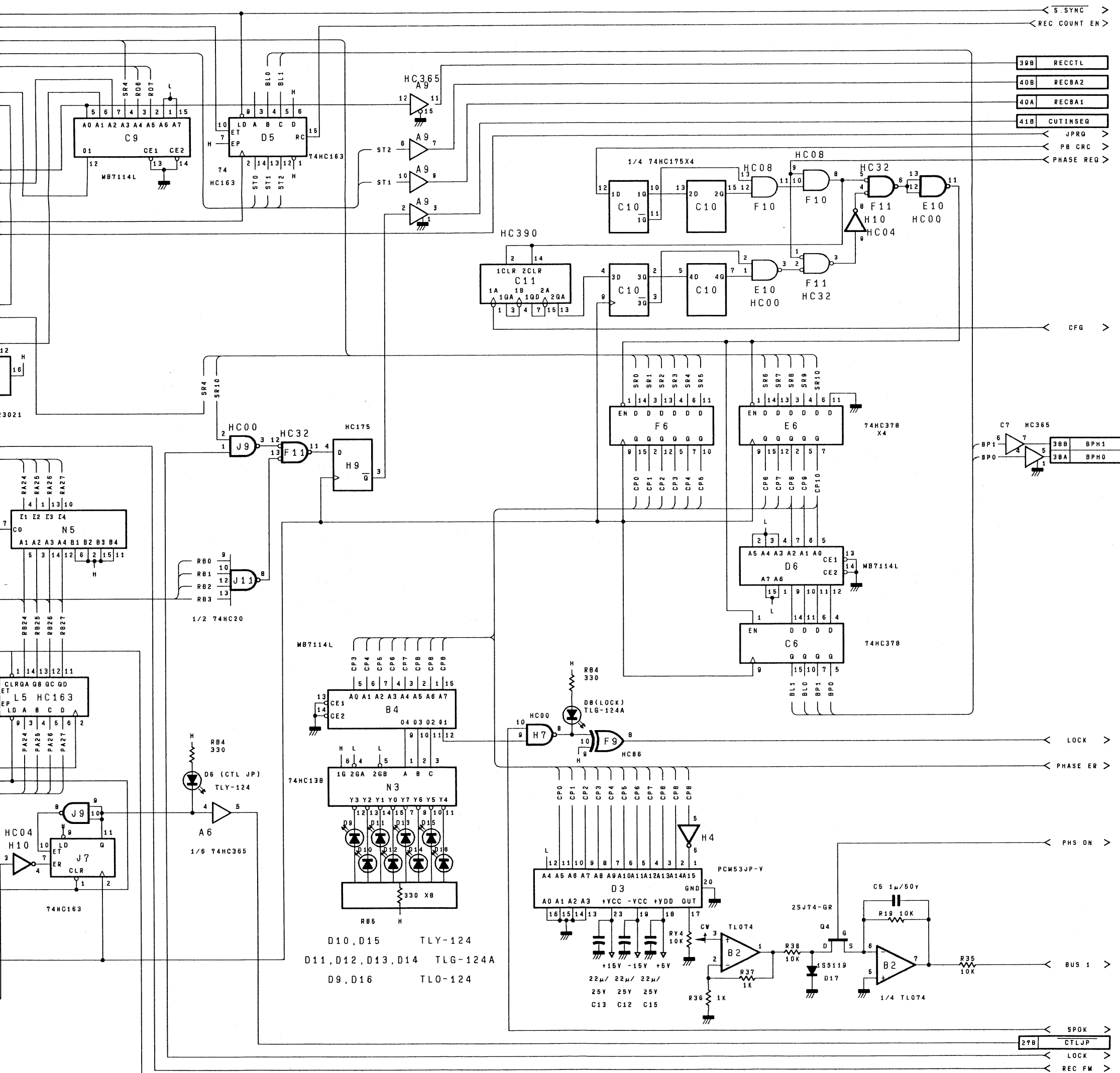


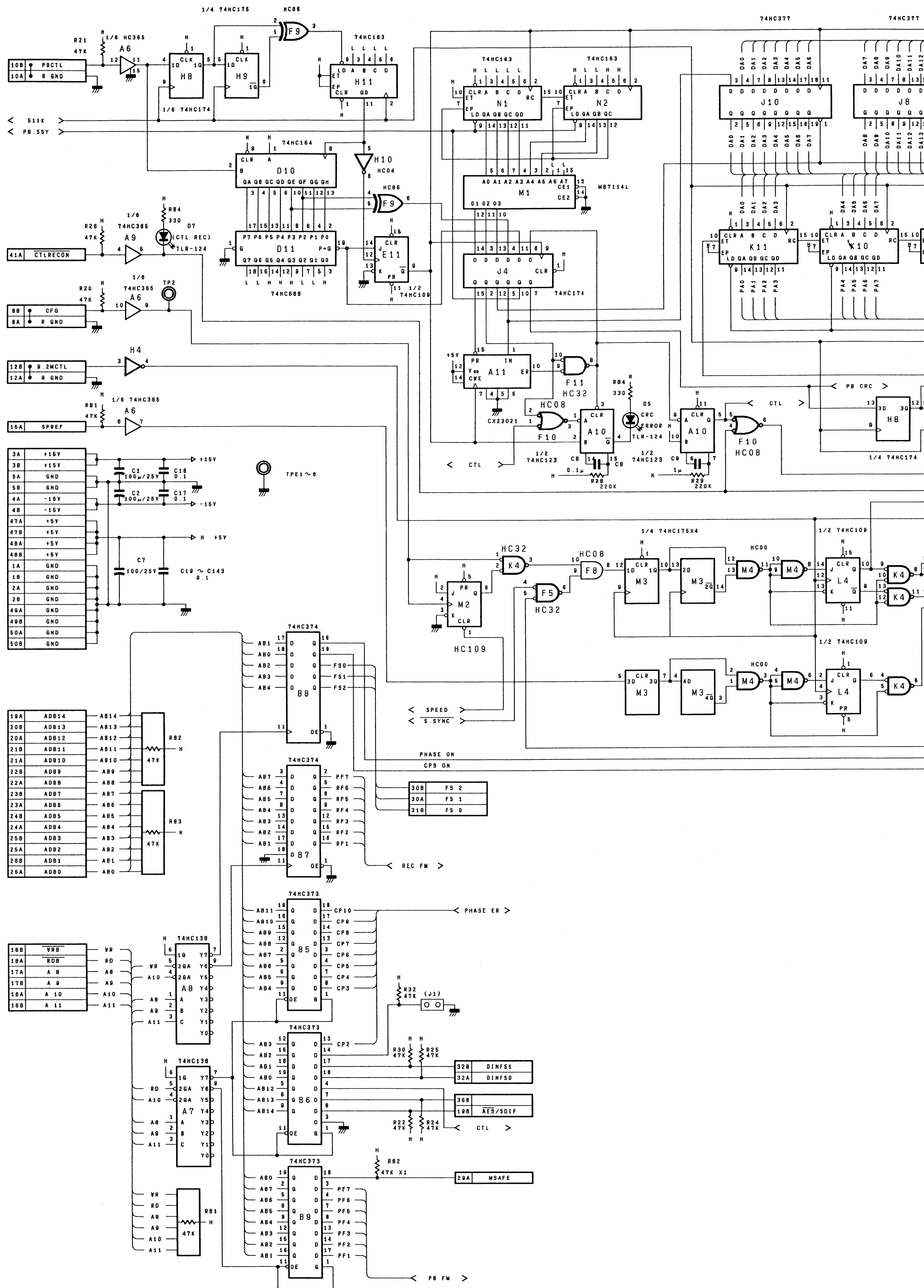


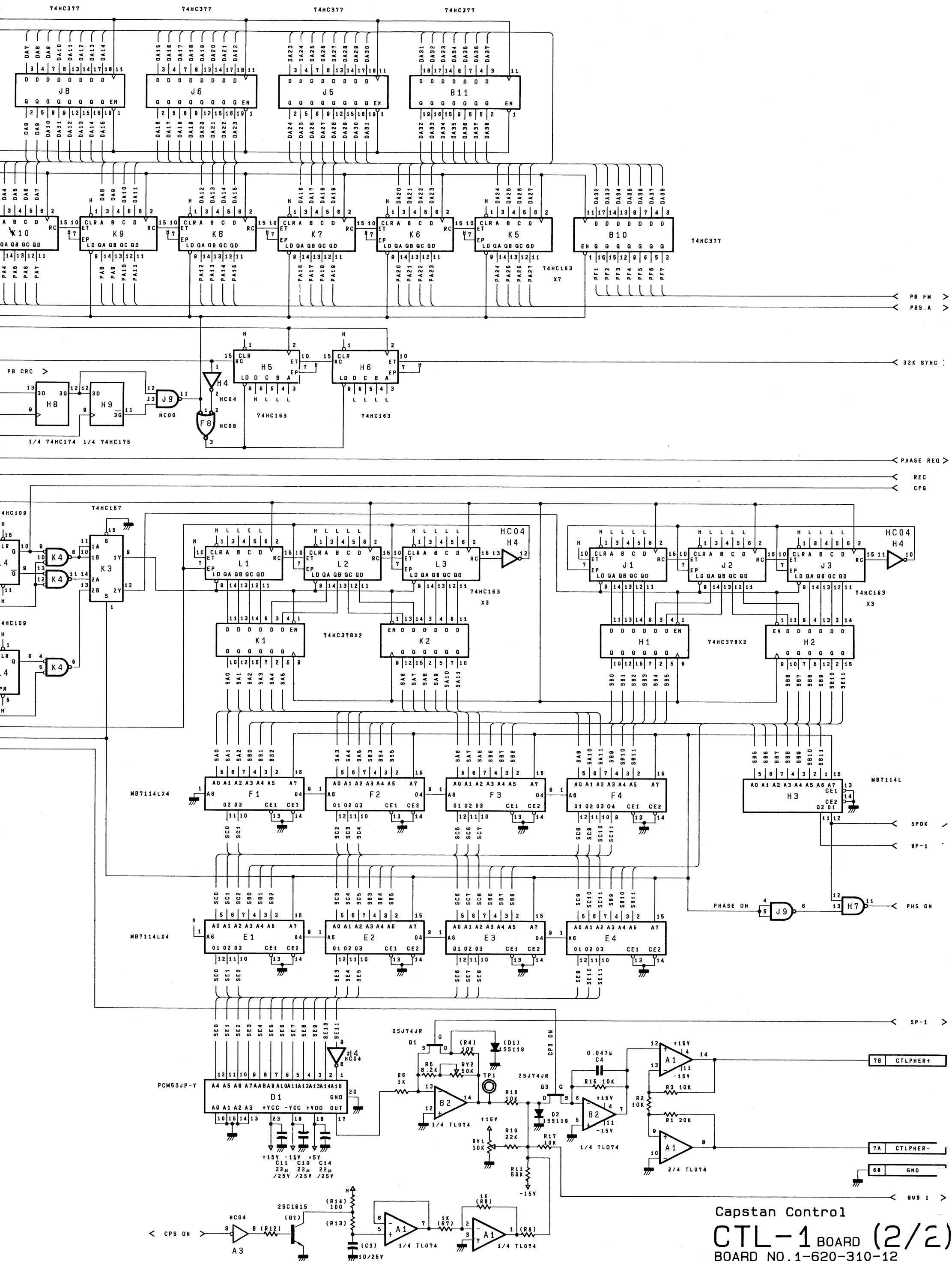
* (R** OR C**) IS NOT MOUNTED. (PCM-3402)

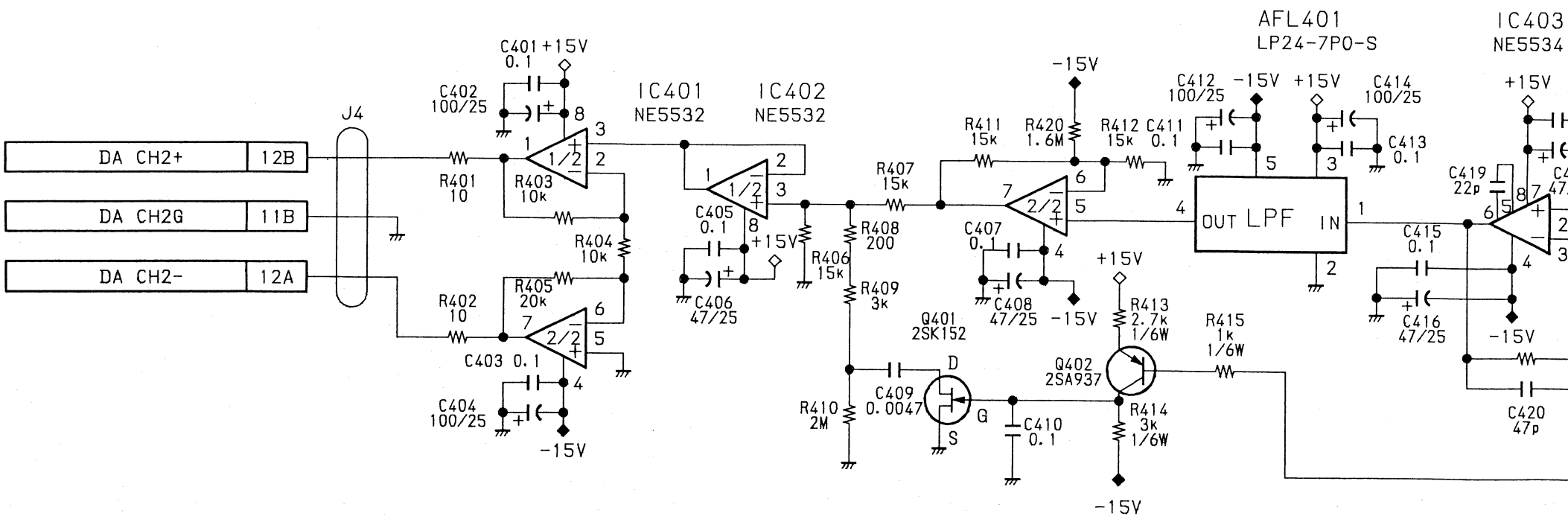
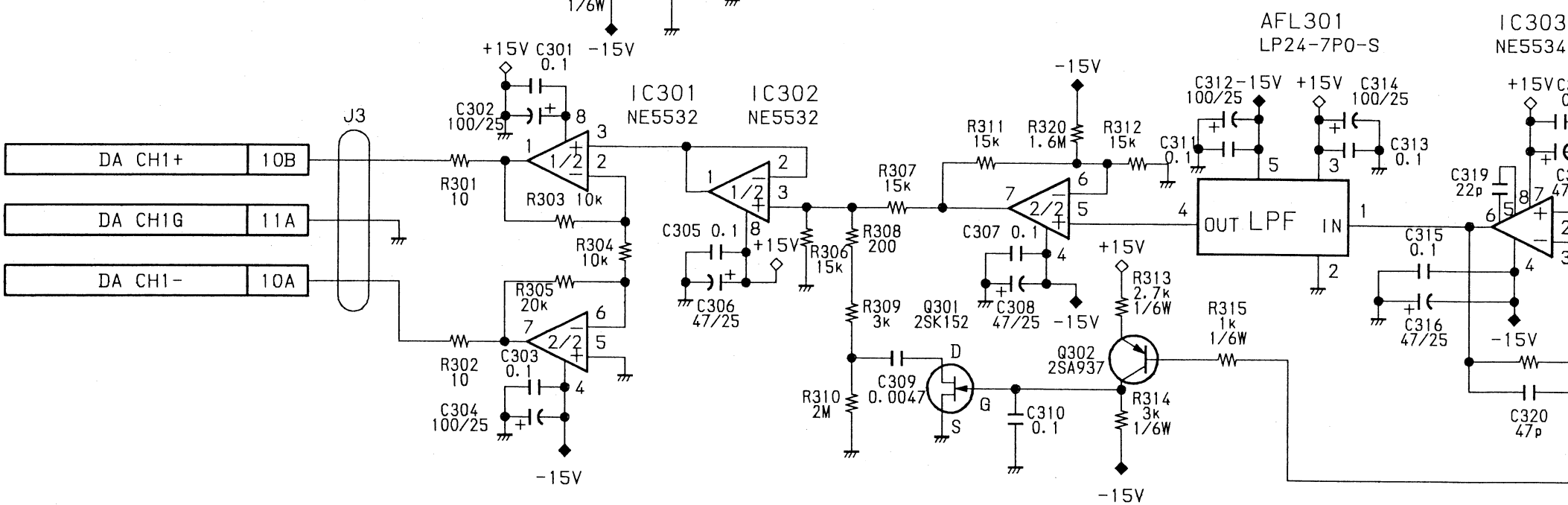
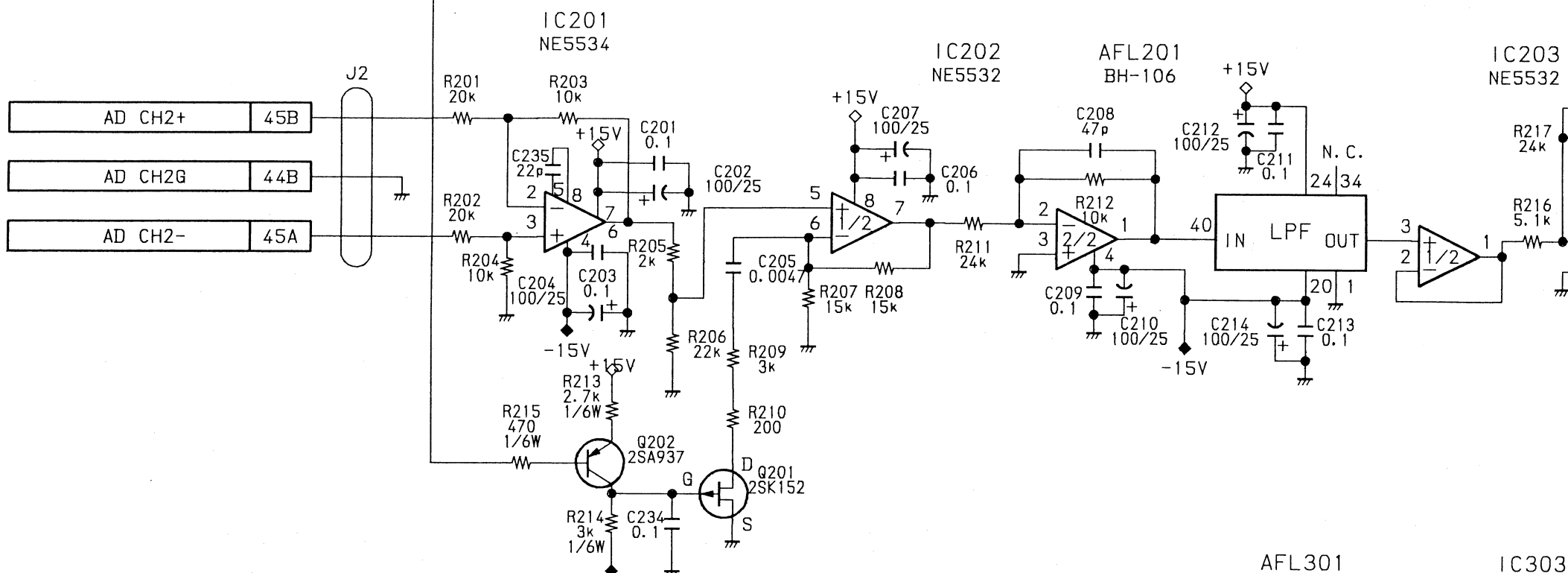
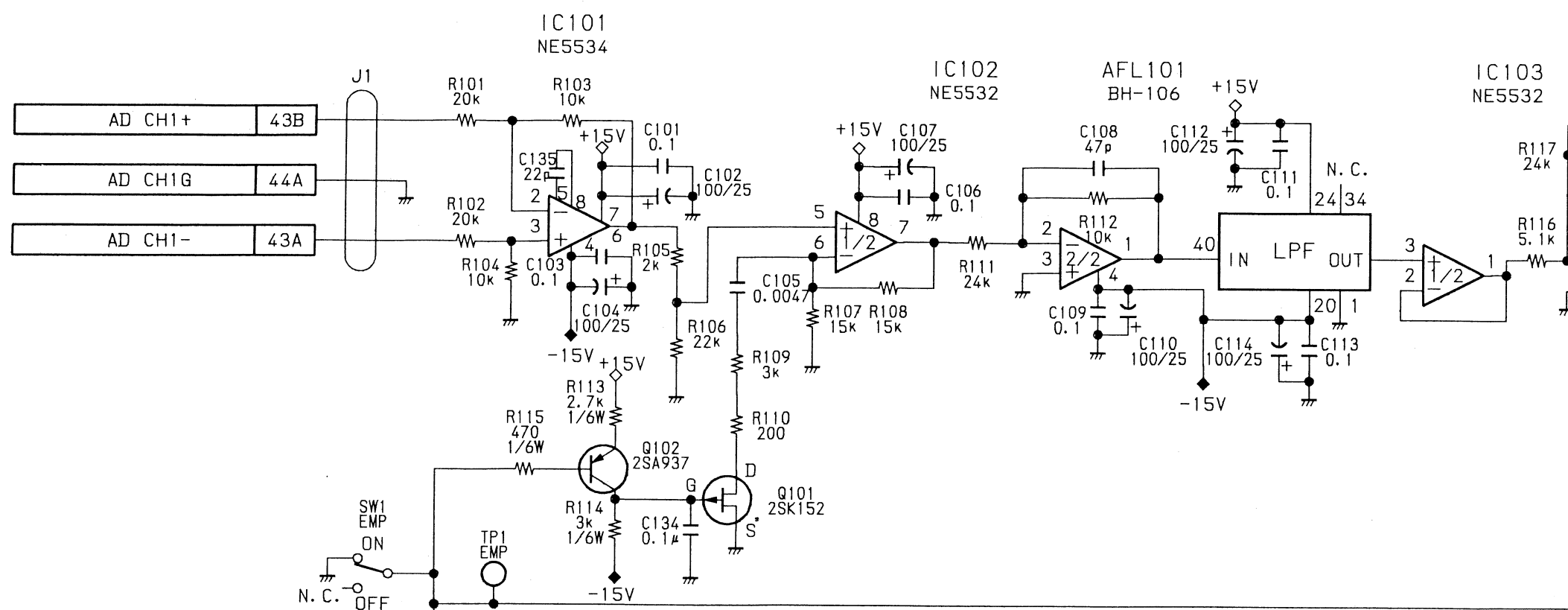
Capstan Control
CTL-1 BOARD (1/2)
 BOARD NO. 1-620-310-12
 PCM-3402

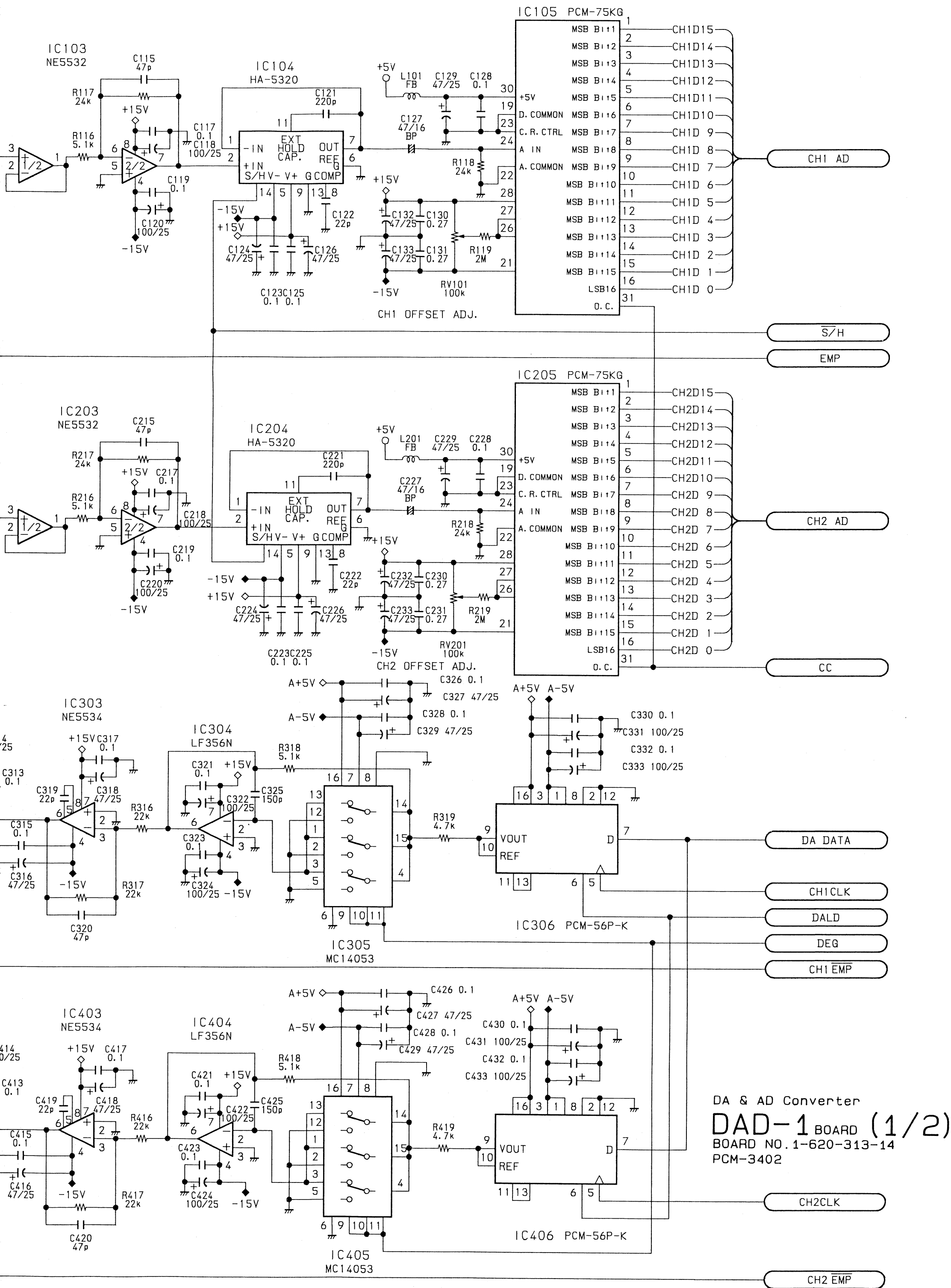


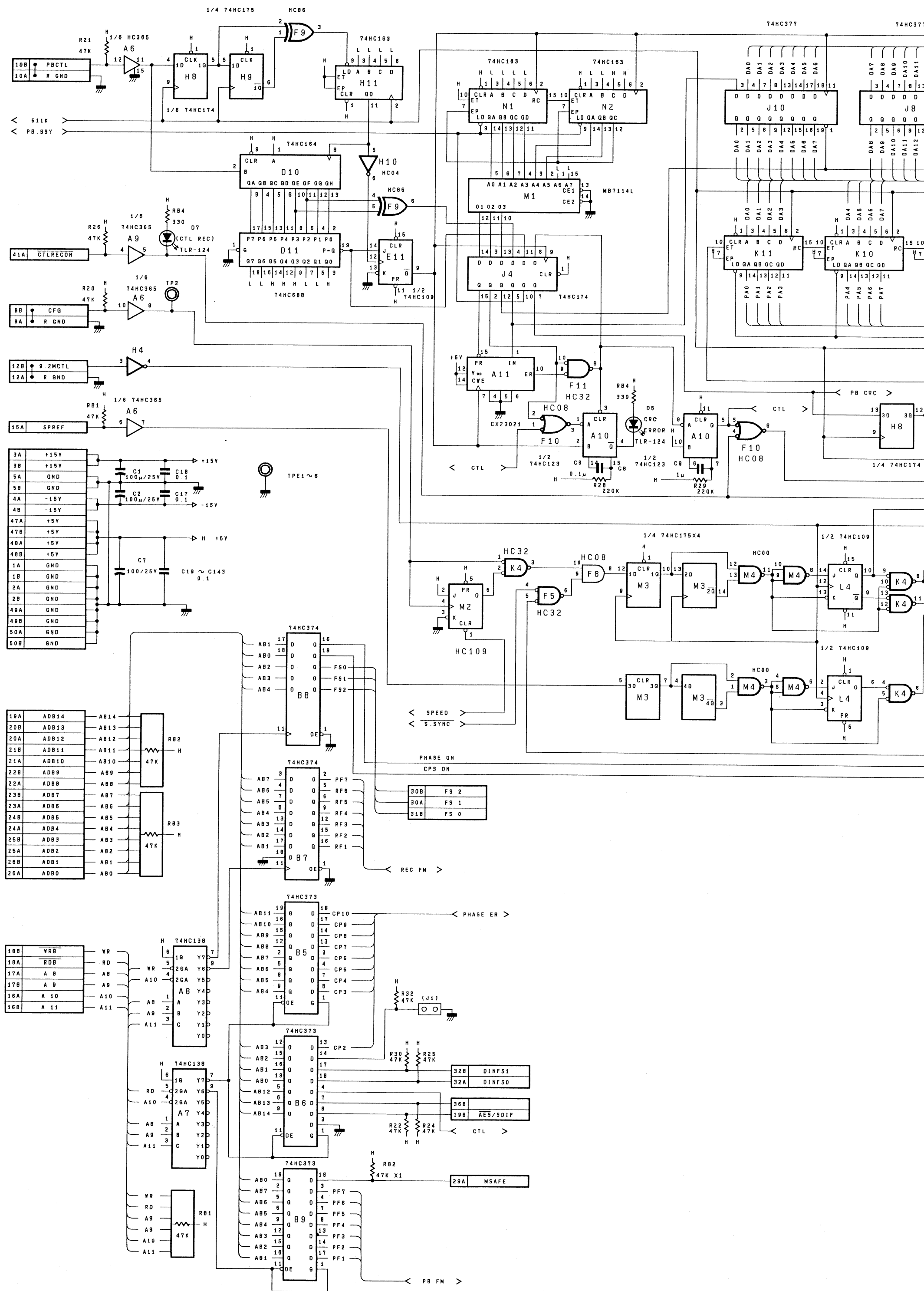


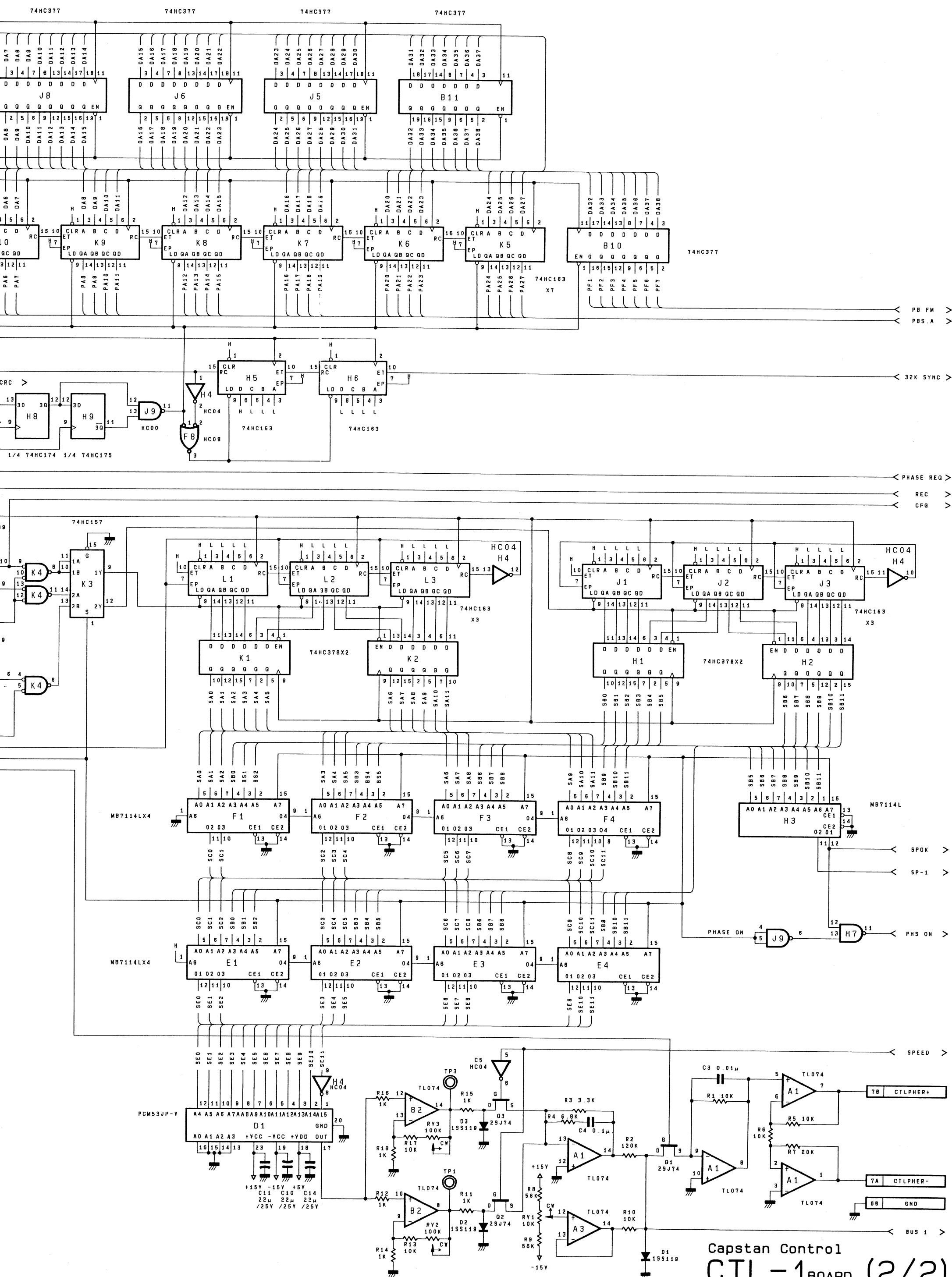




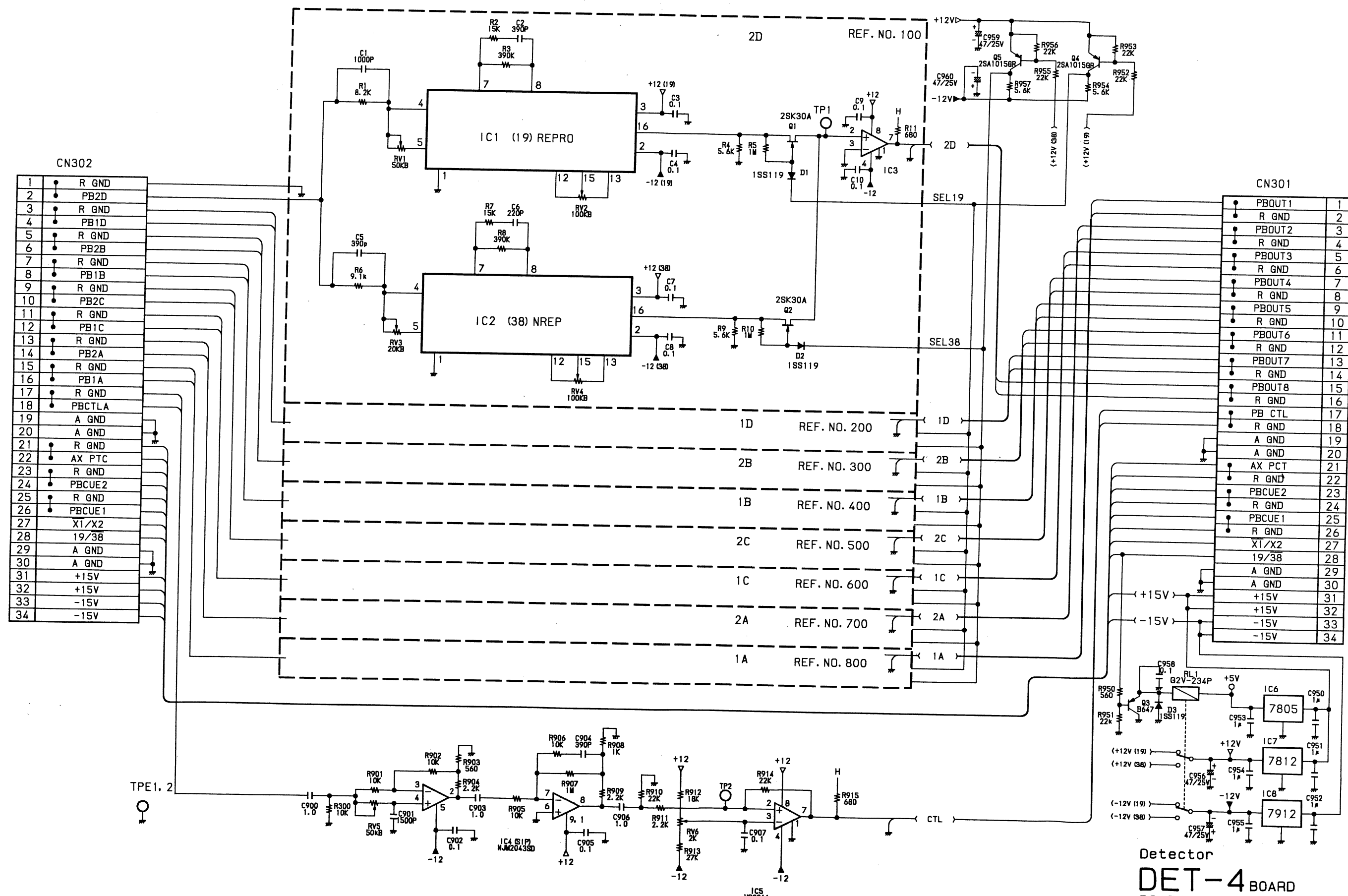








Capstan Control
CTL-1_{BOARD} (2/2)
BOARD NO. 1-620-310-13
PCM-3402

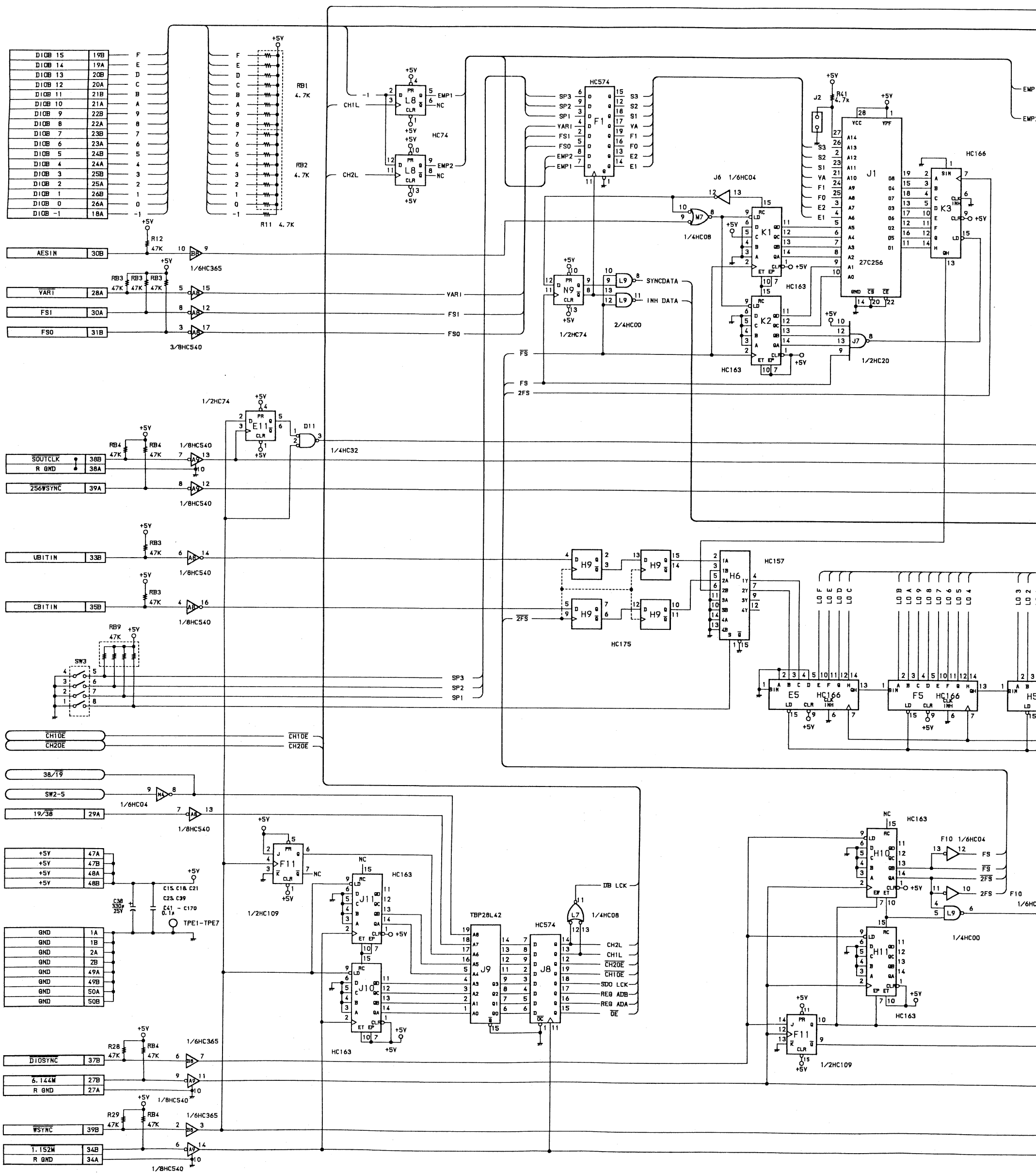


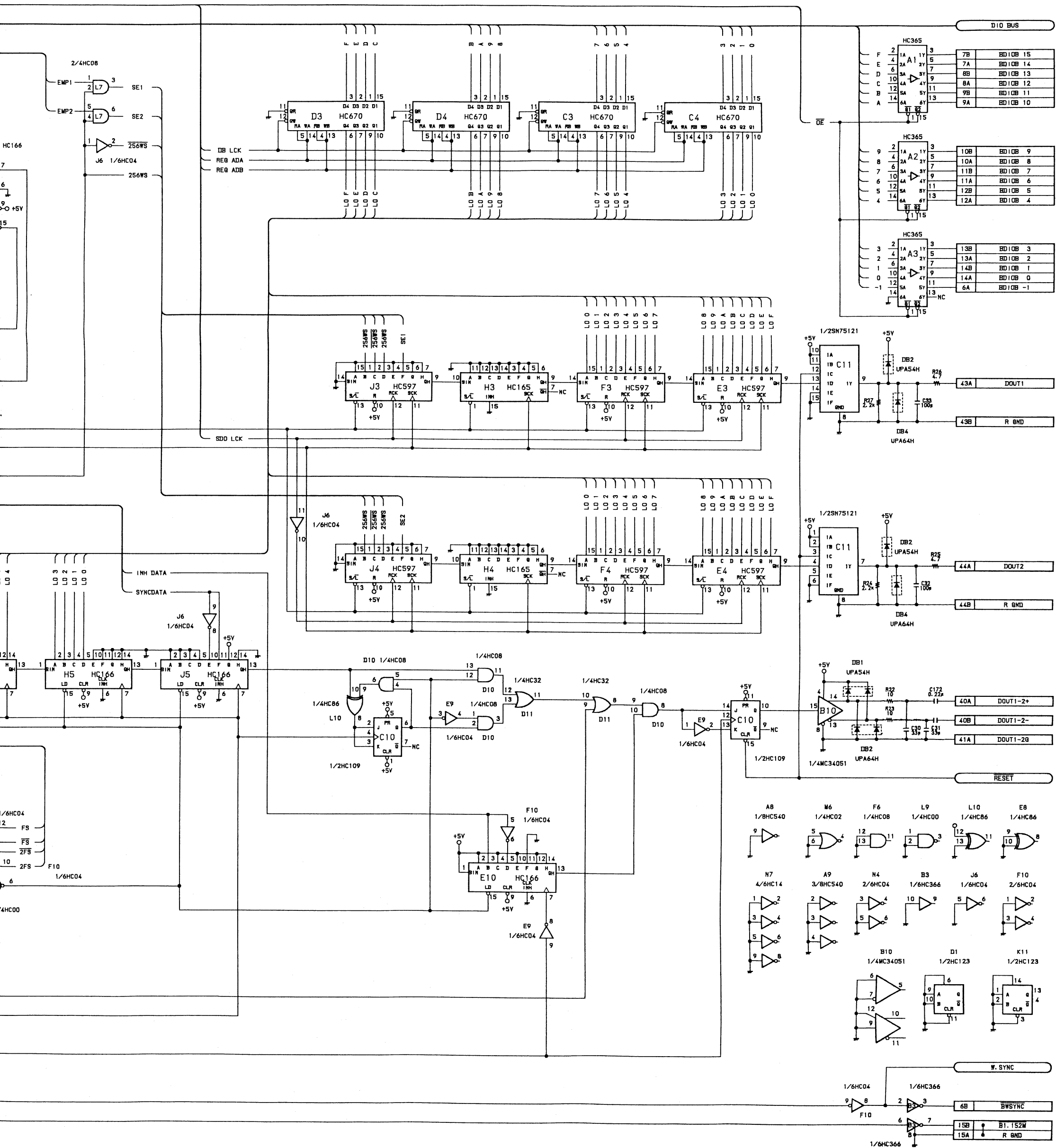
CN302

1	R GND
2	PB2D
3	R GND
4	PB1D
5	R GND
6	PB2B
7	R GND
8	PB1B
9	R GND
10	PB2C
11	R GND
12	PB1C
13	R GND
14	PB2A
15	R GND
16	PB1A
17	R GND
18	PBCTLA
19	A GND
20	A GND
21	R GND
22	AX PTC
23	R GND
24	PBCUE2
25	R GND
26	PBCUE1
27	X1/X2
28	19/38
29	A GND
30	A GND
31	+15V
32	+15V
33	-15V
34	-15V

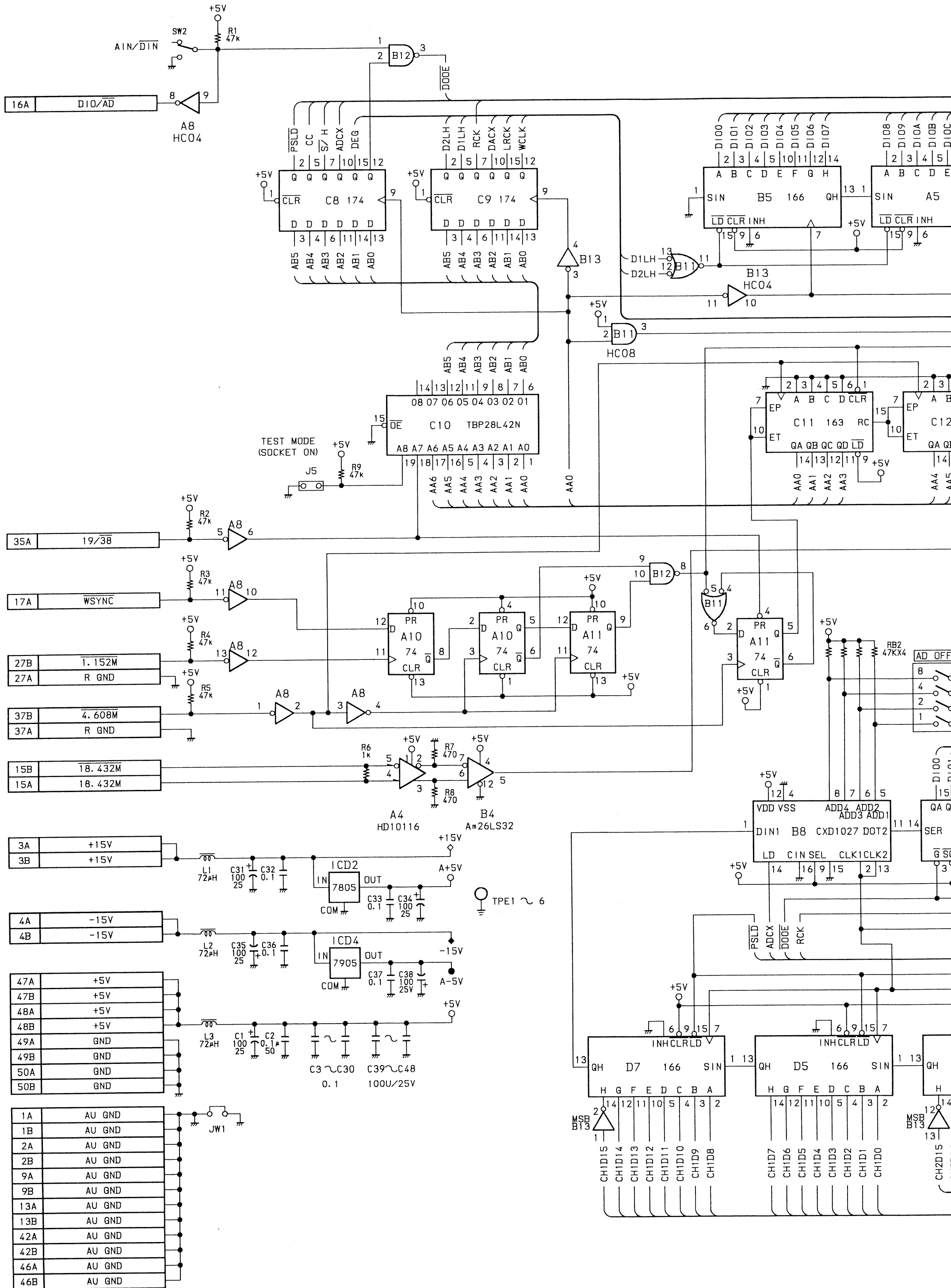
CN301

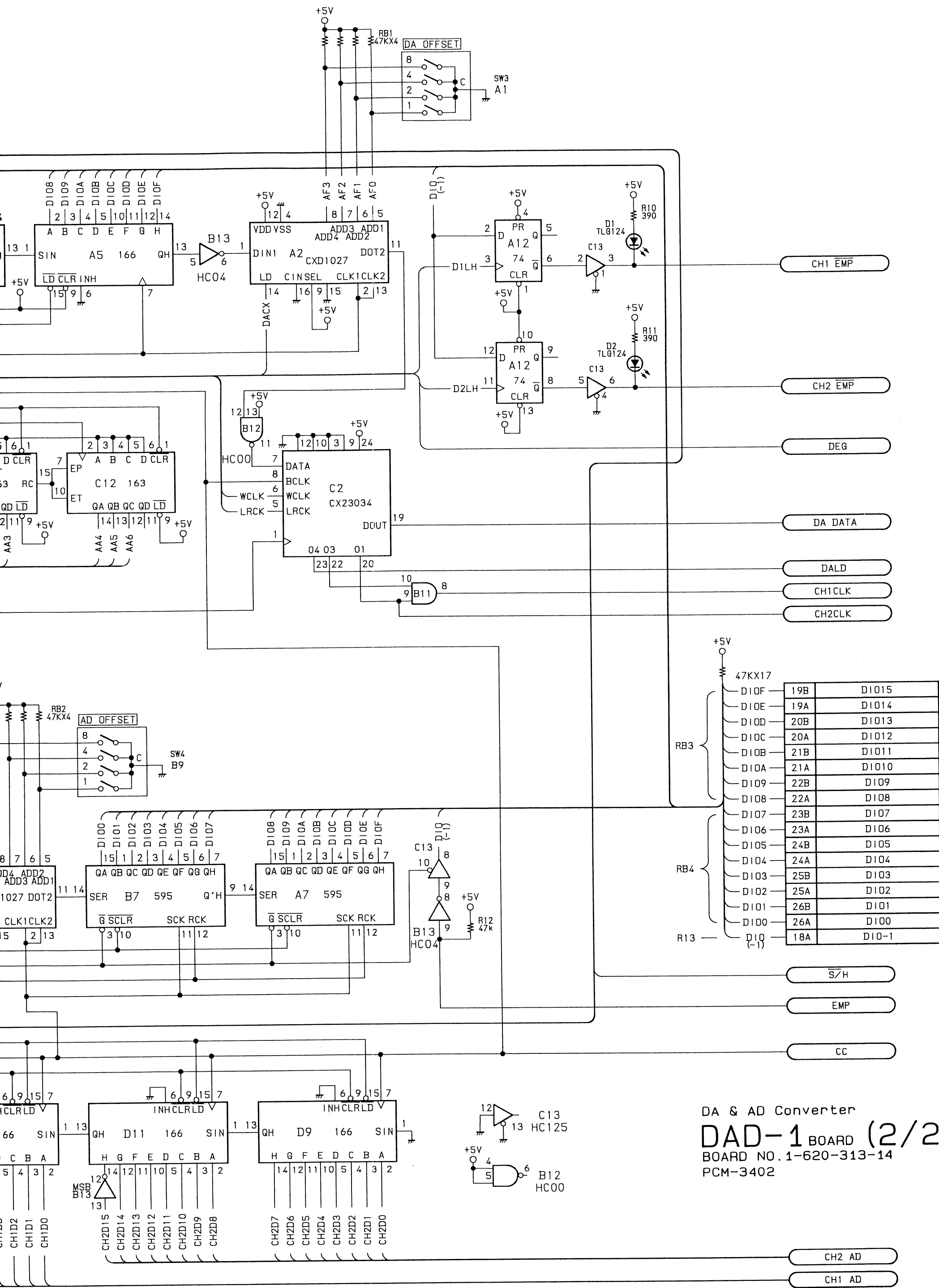
PBOUT1	1
R GND	2
PBOUT2	3
R GND	4
PBOUT3	5
R GND	6
PBOUT4	7
R GND	8
PBOUT5	9
R GND	10
PBOUT6	11
R GND	12
PBOUT7	13
R GND	14
PBOUT8	15
R GND	16
PB CTL	17
R GND	18
A GND	19
A GND	20
AX PCT	21
R GND	22
PBCUE2	23
R GND	24
PBCUE1	25
R GND	26
X1/X2	27
19/38	28
A GND	29
A GND	30
+15V	31
+15V	32
-15V	33
-15V	34





Digital Input/Output
DIO-2 BOARD (1/2)
 BOARD NO.1-620-312-13
 PCM-3402

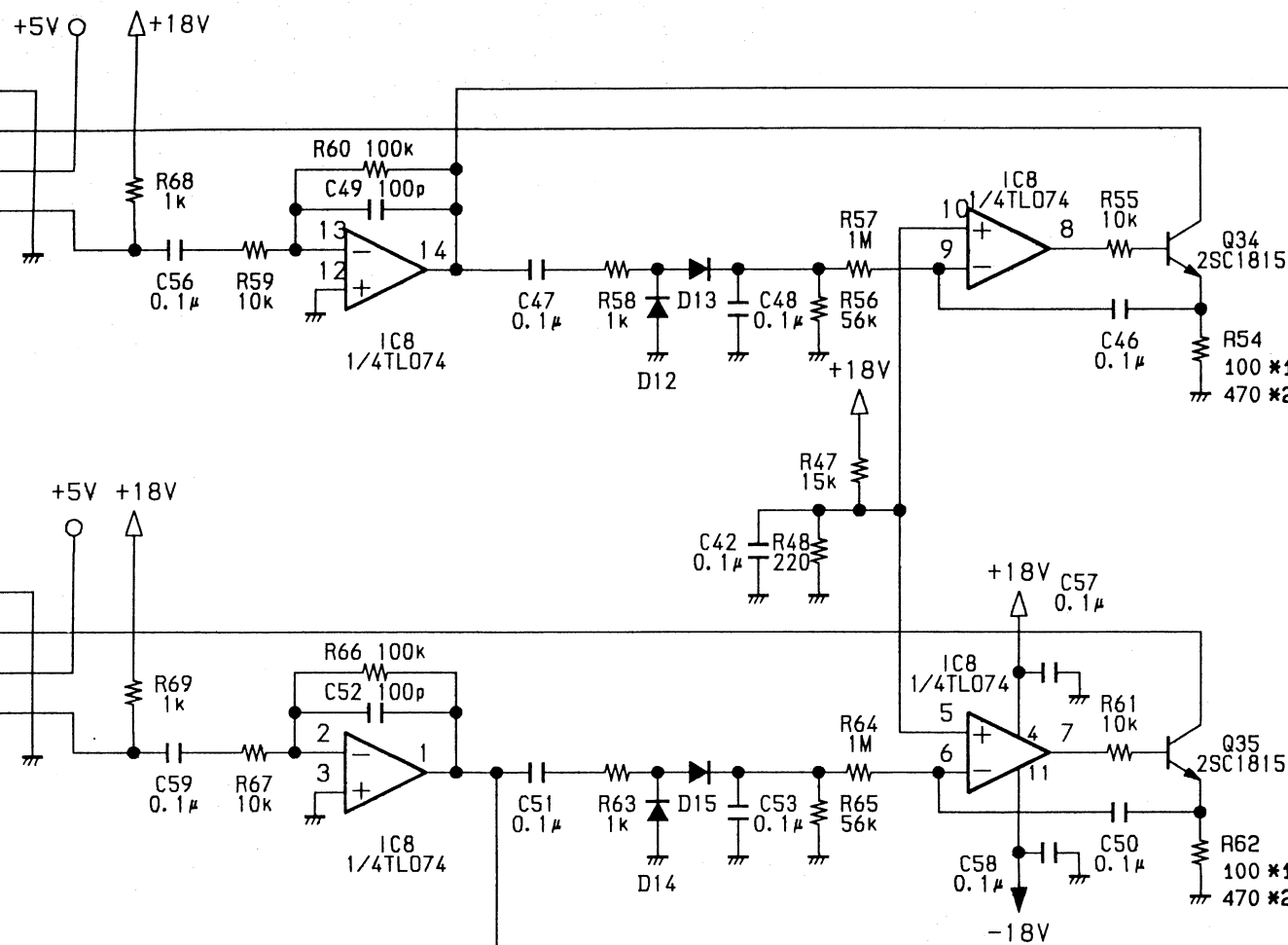




DA & AD Converter
DAD-1 BOARD (2/2)
 BOARD NO. 1-620-313-14
 PCM-3402

CN464

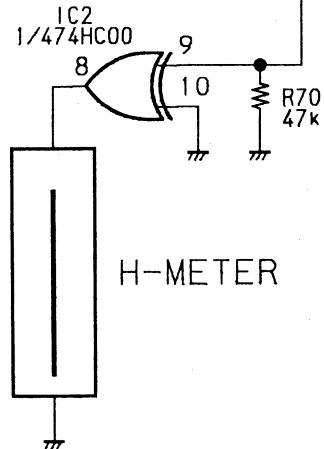
1	R GND
2	PD1
3	+5V
4	FG1



NOTE:
*1: Up to Serial NO.
*2: Serial NO. 10901

CN461

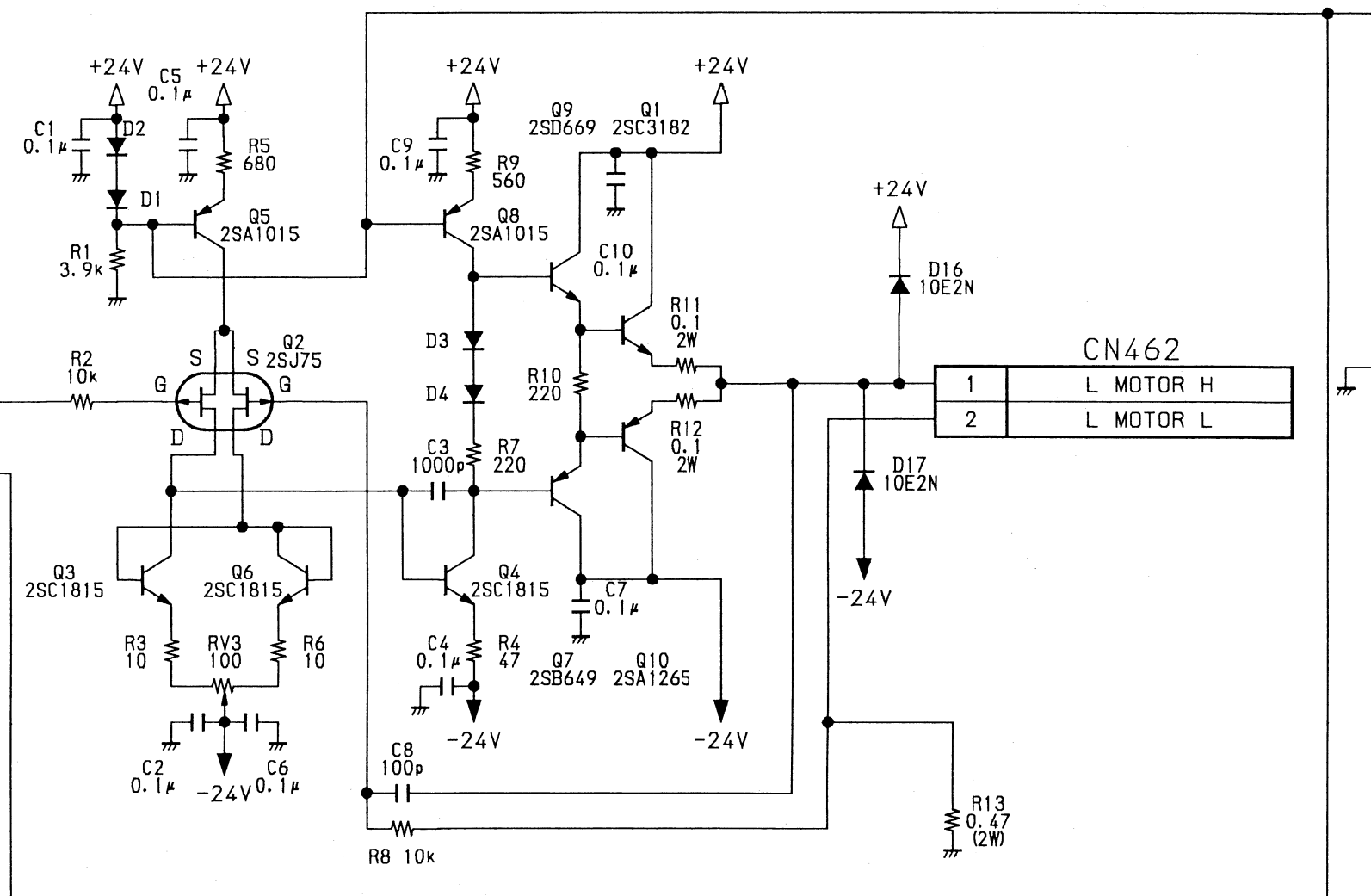
1	L REEL
2	GND
3	R REEL
4	GND
5	CAP
6	GND
7	PINCH ON
8	GND



H-METER

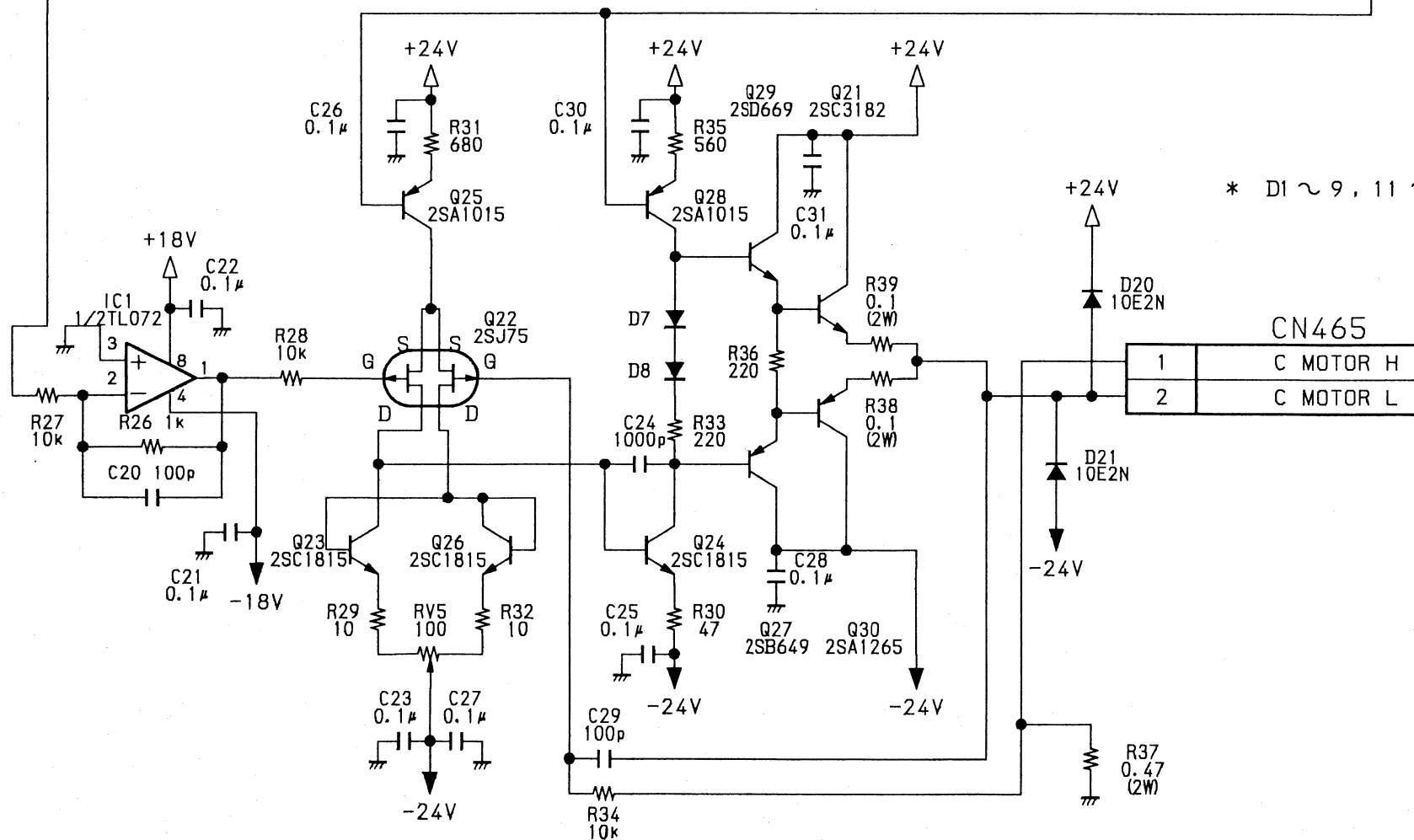
CN462

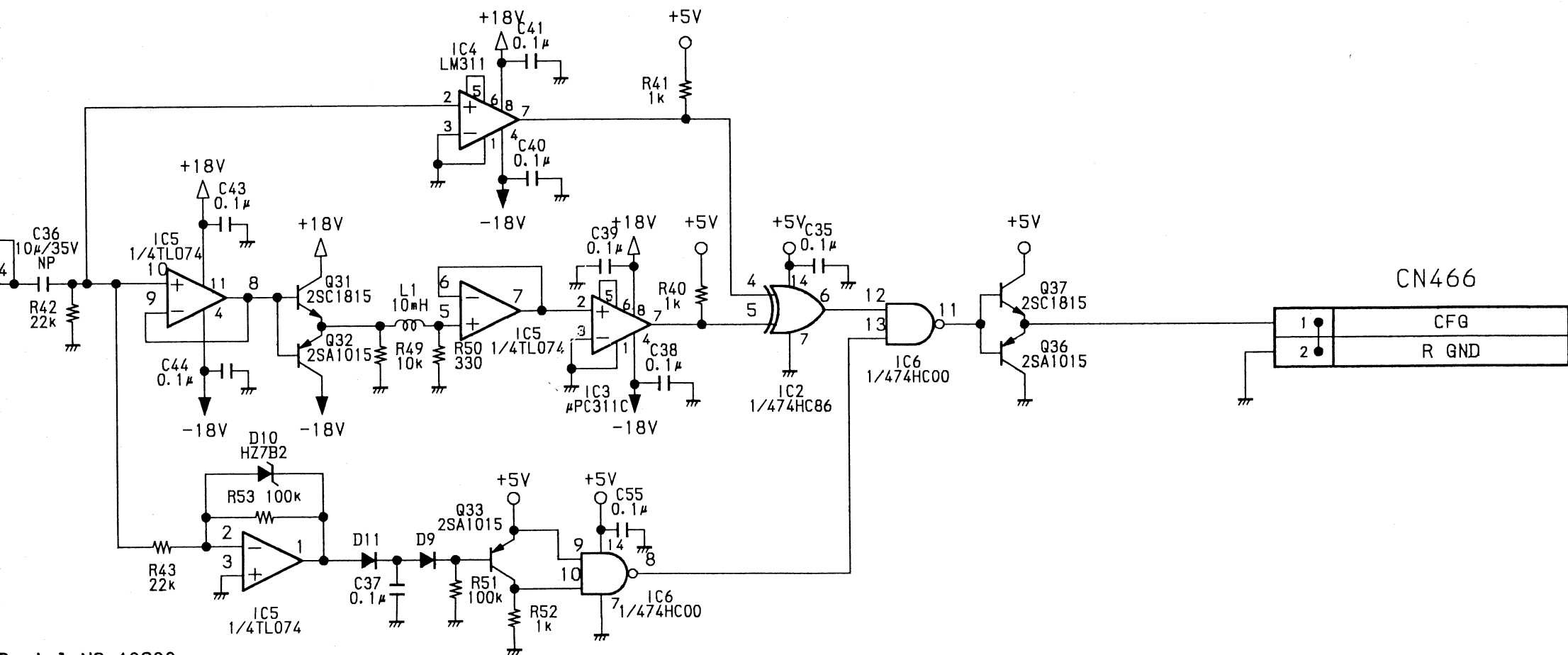
1	L MOTOR H
2	L MOTOR L



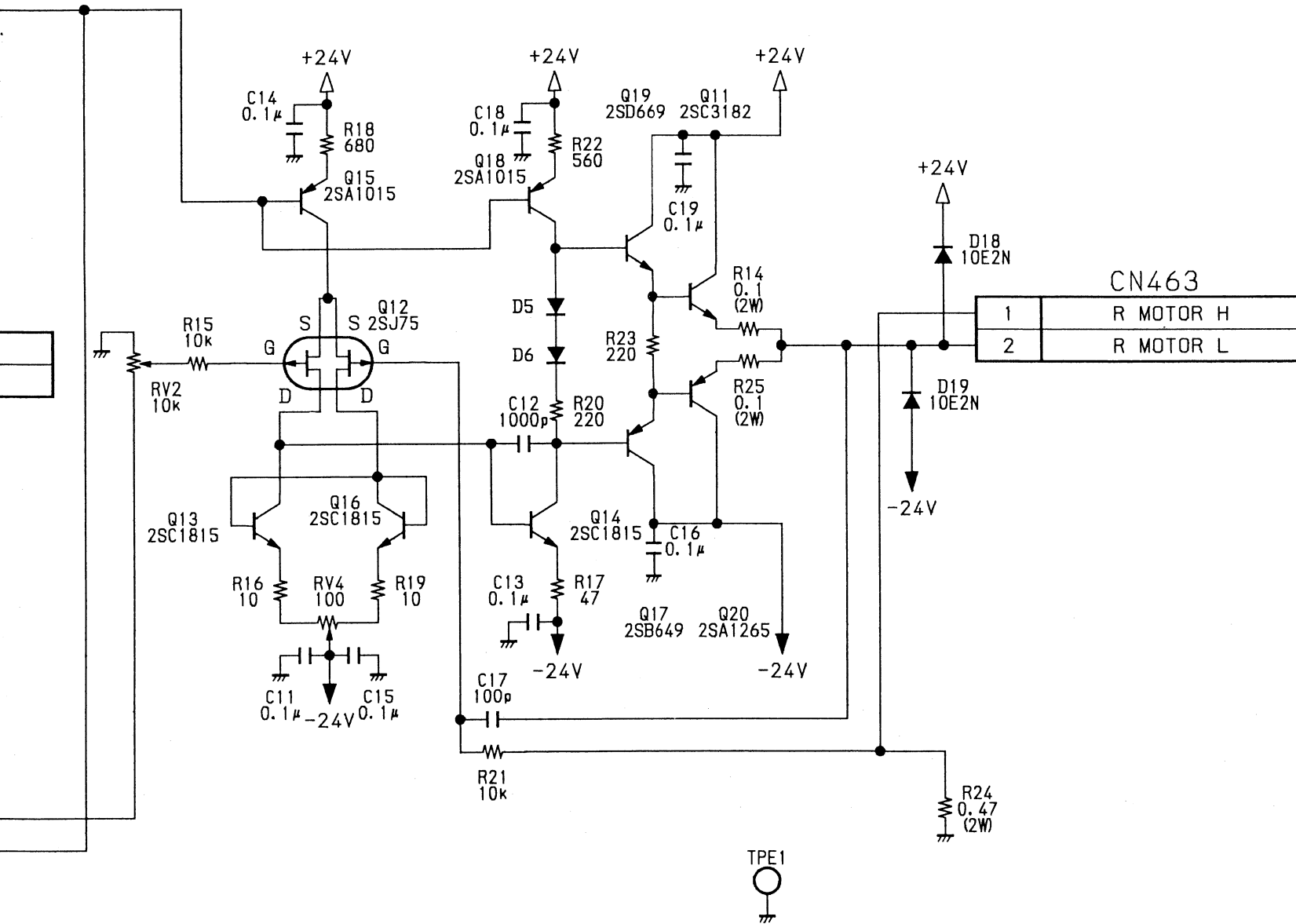
CN465

1	C MOTOR H
2	C MOTOR L



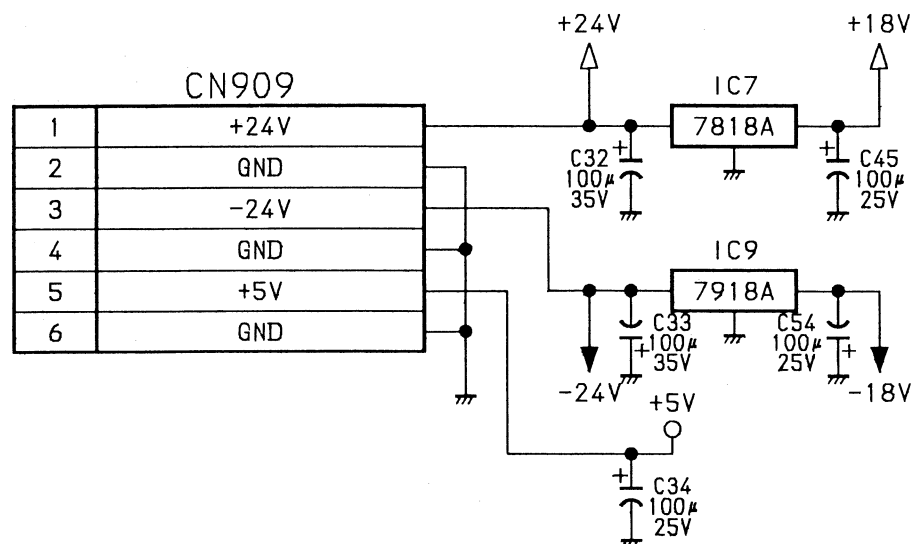


Serial NO.10900
NO.10901 and higher

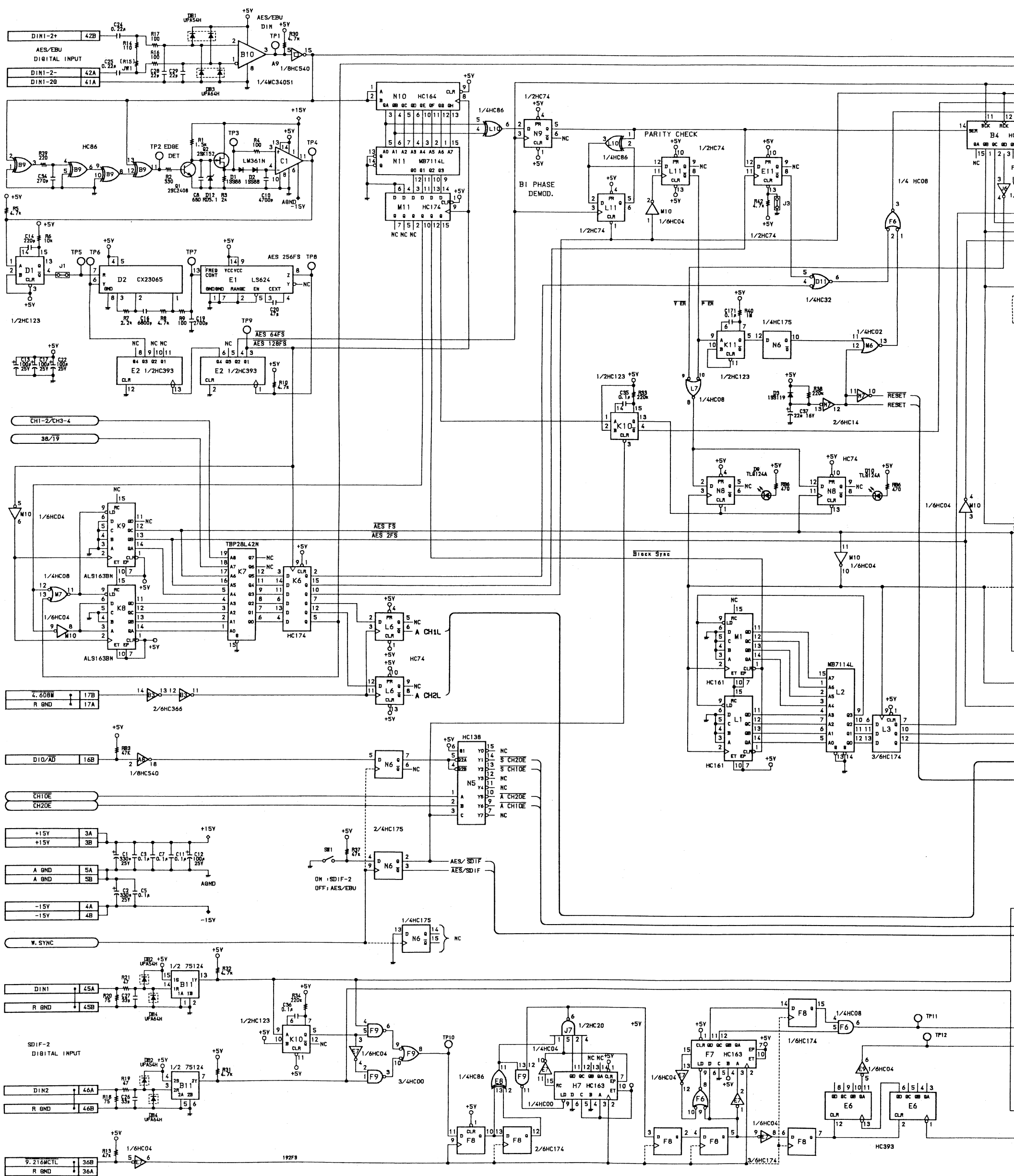


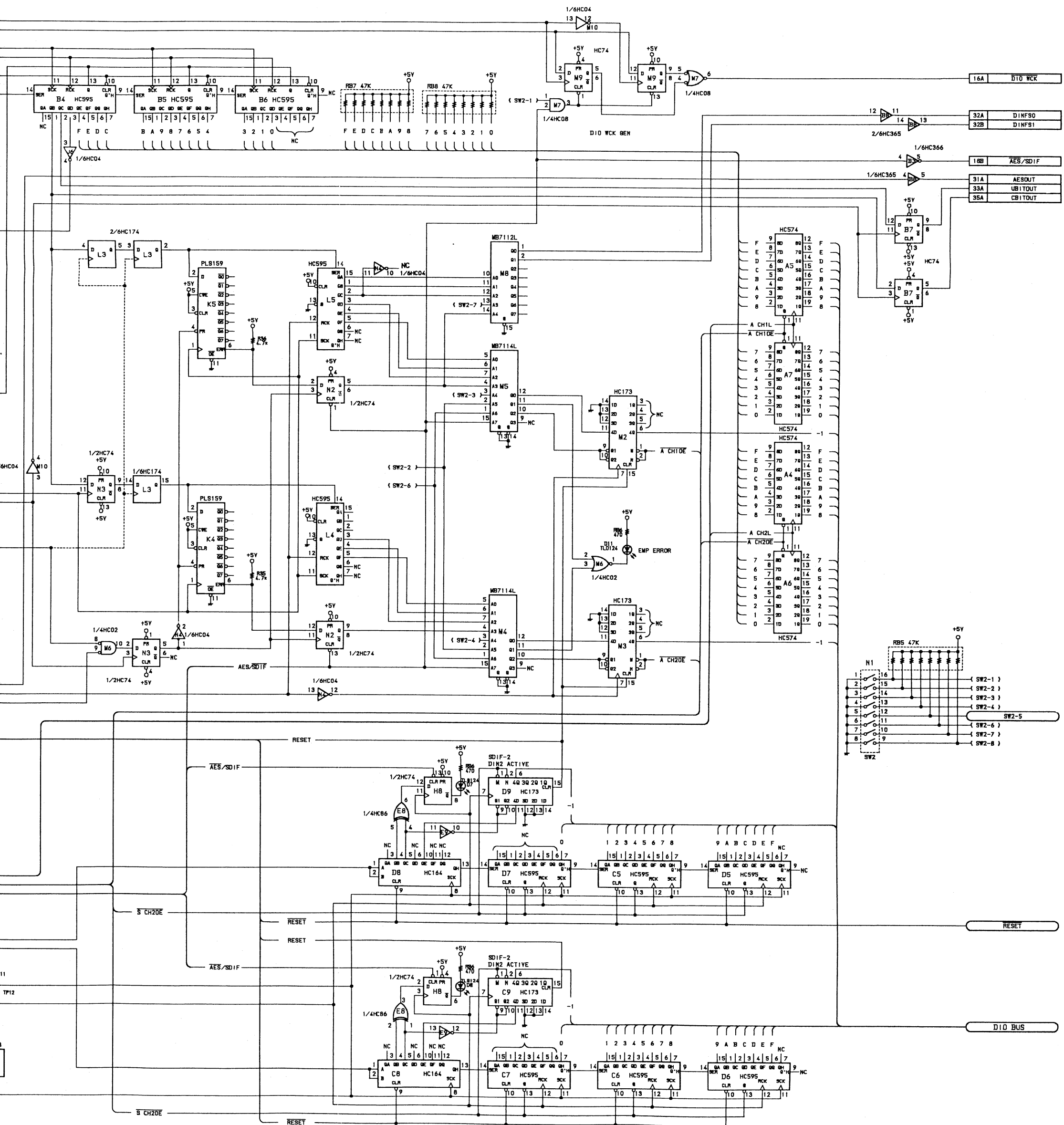
01 ~ 9, 11 ~ 15 1SS119

CN465
C MOTOR H
C MOTOR L

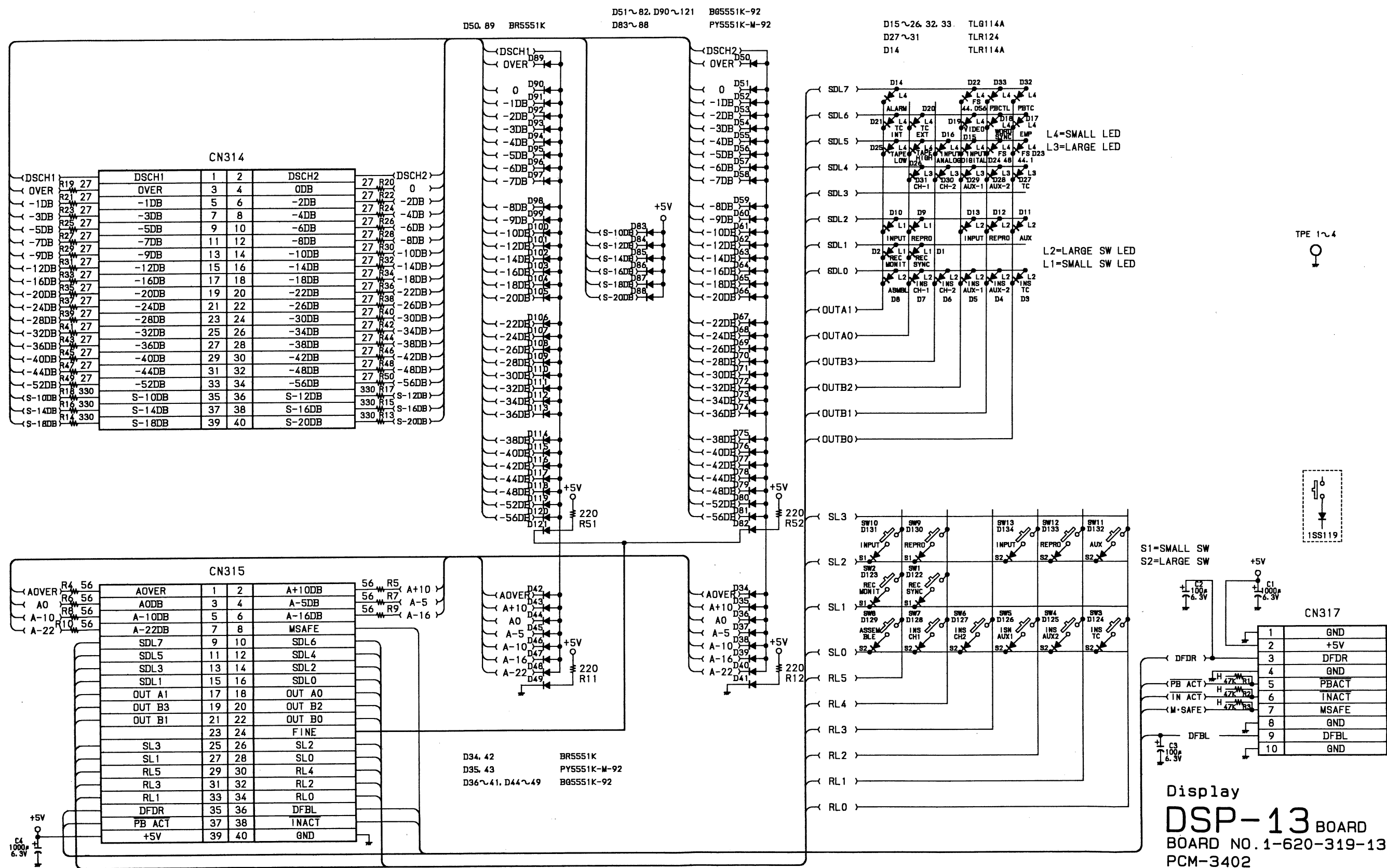


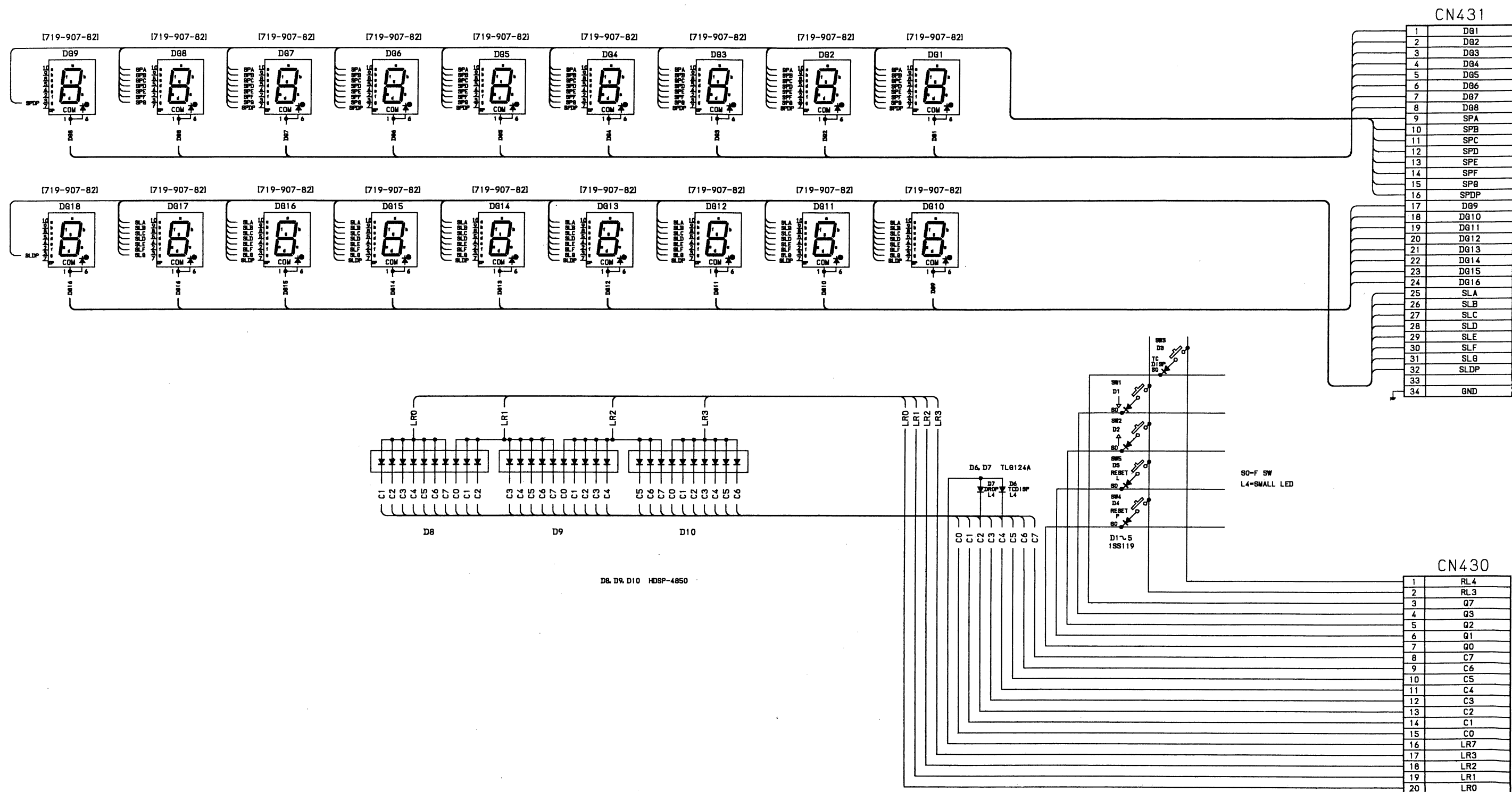
Motor Driver
DR-54 BOARD
BOARD NO.1-620-325-13
PCM-3402



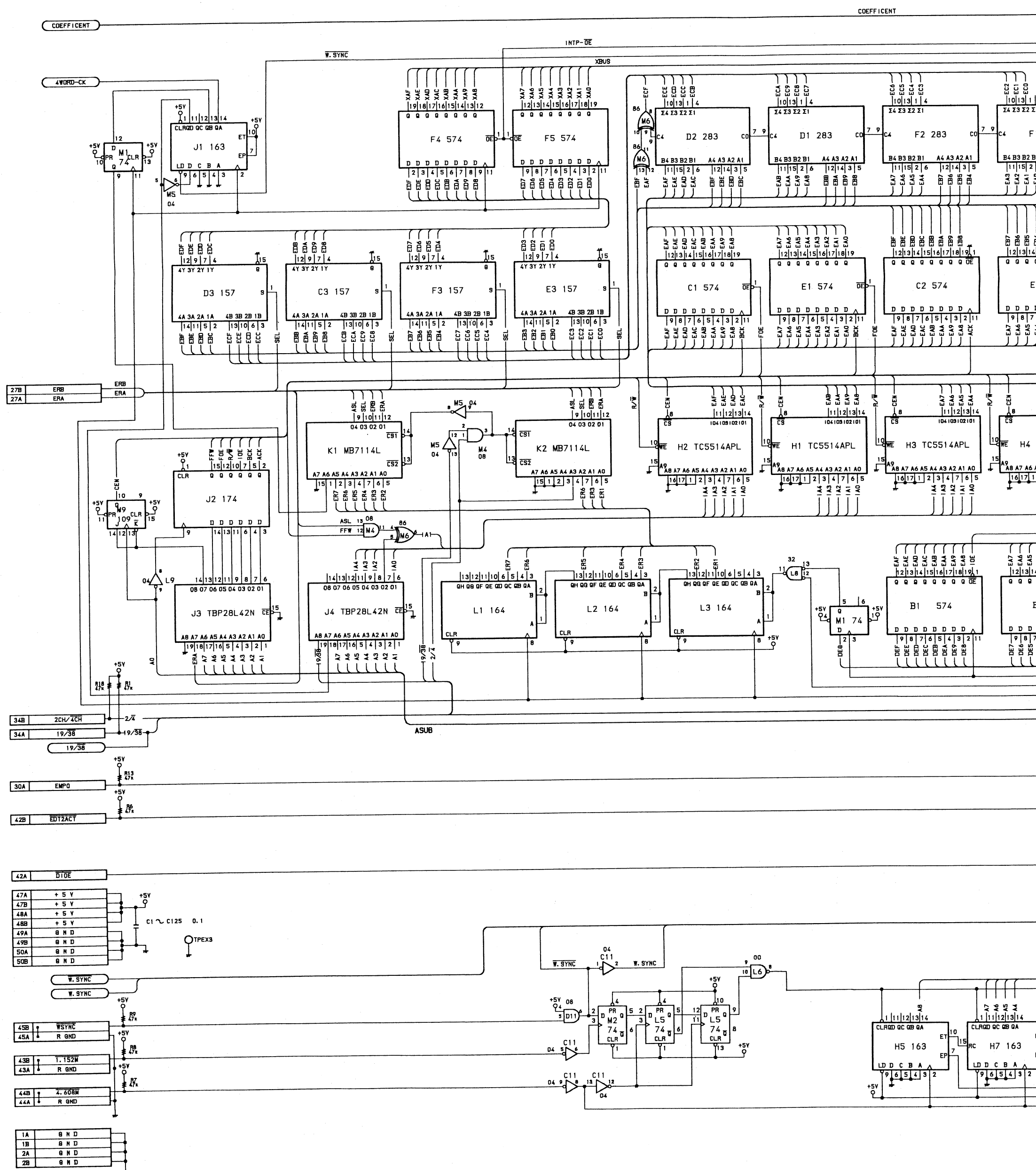


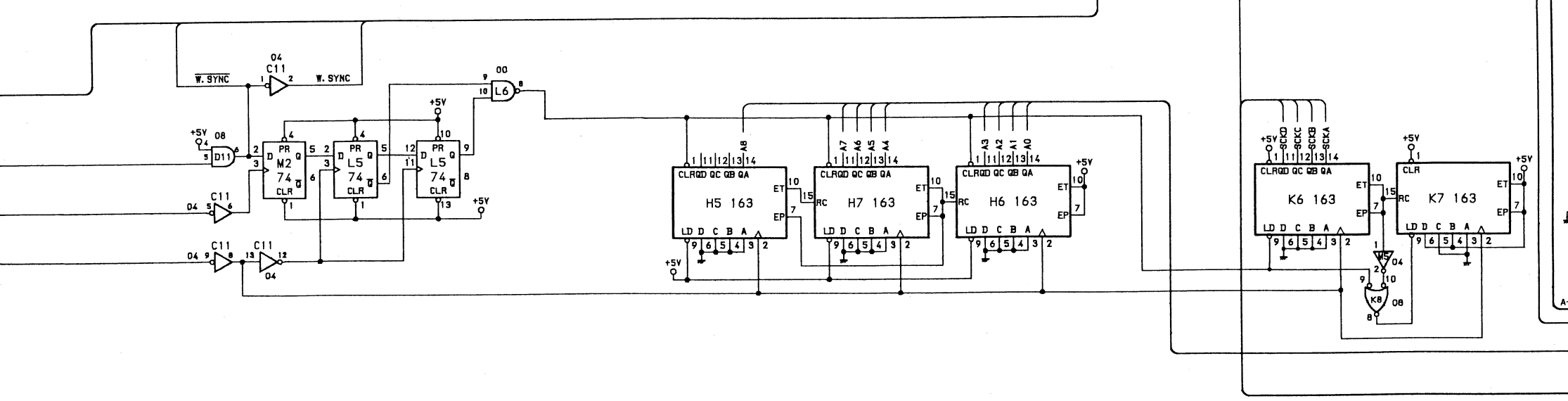
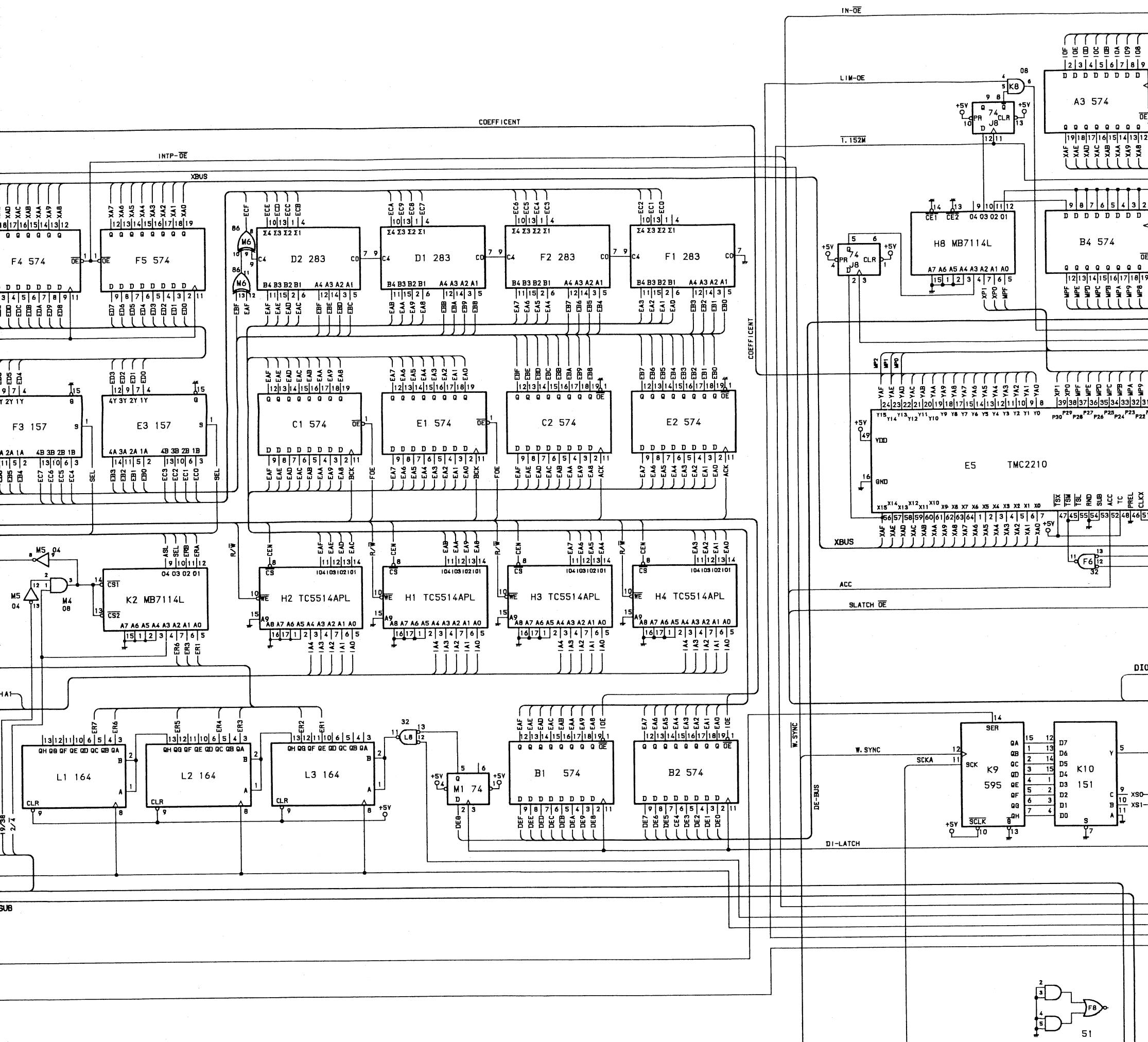
Digital Input/Output
DIO-2 BOARD (2/2)
 BOARD NO. 1-620-312-14
 PCM-3402

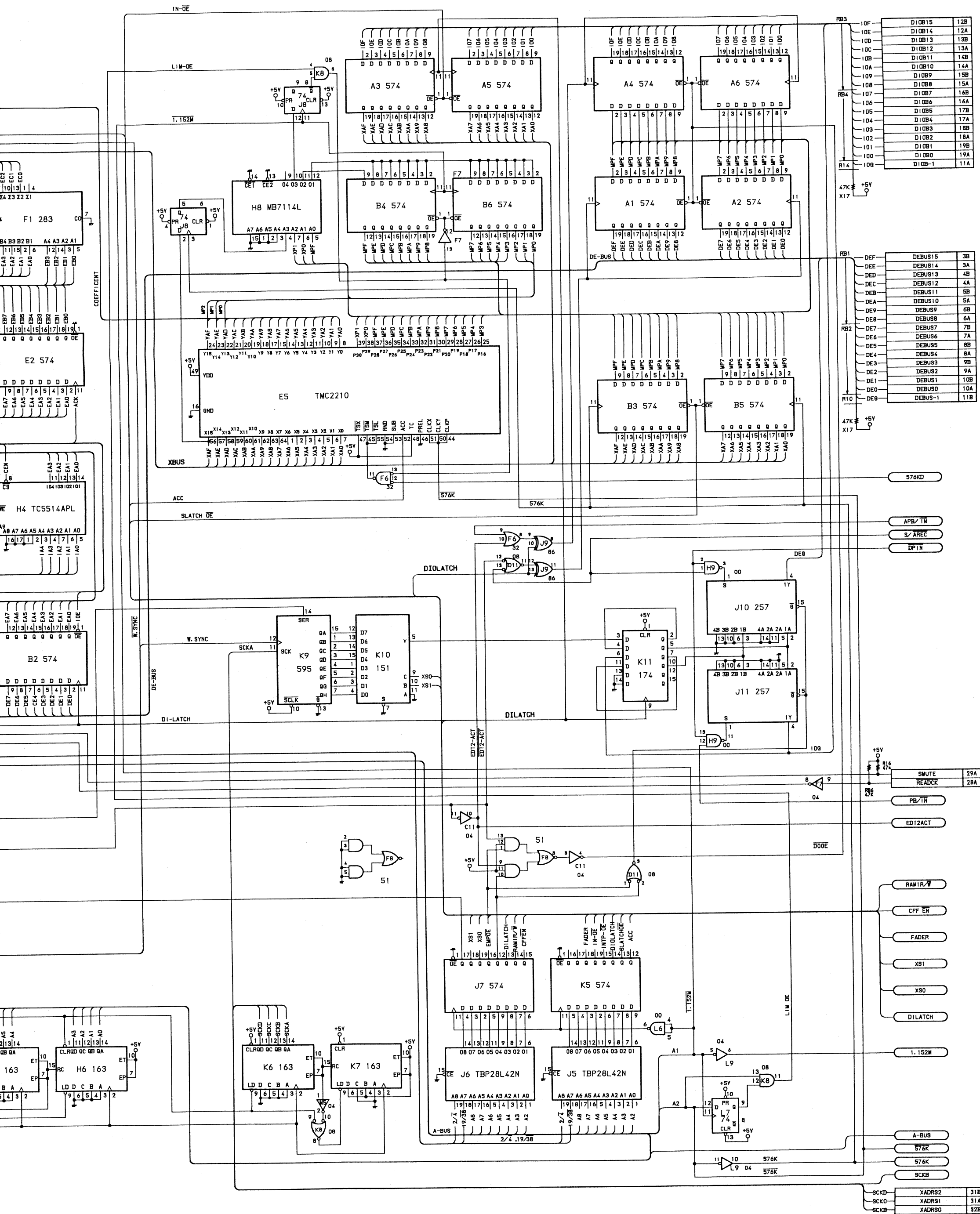




Display
DSP-14 BOARD
 BOARD NO. 1-620-322-13
 PCM-3402

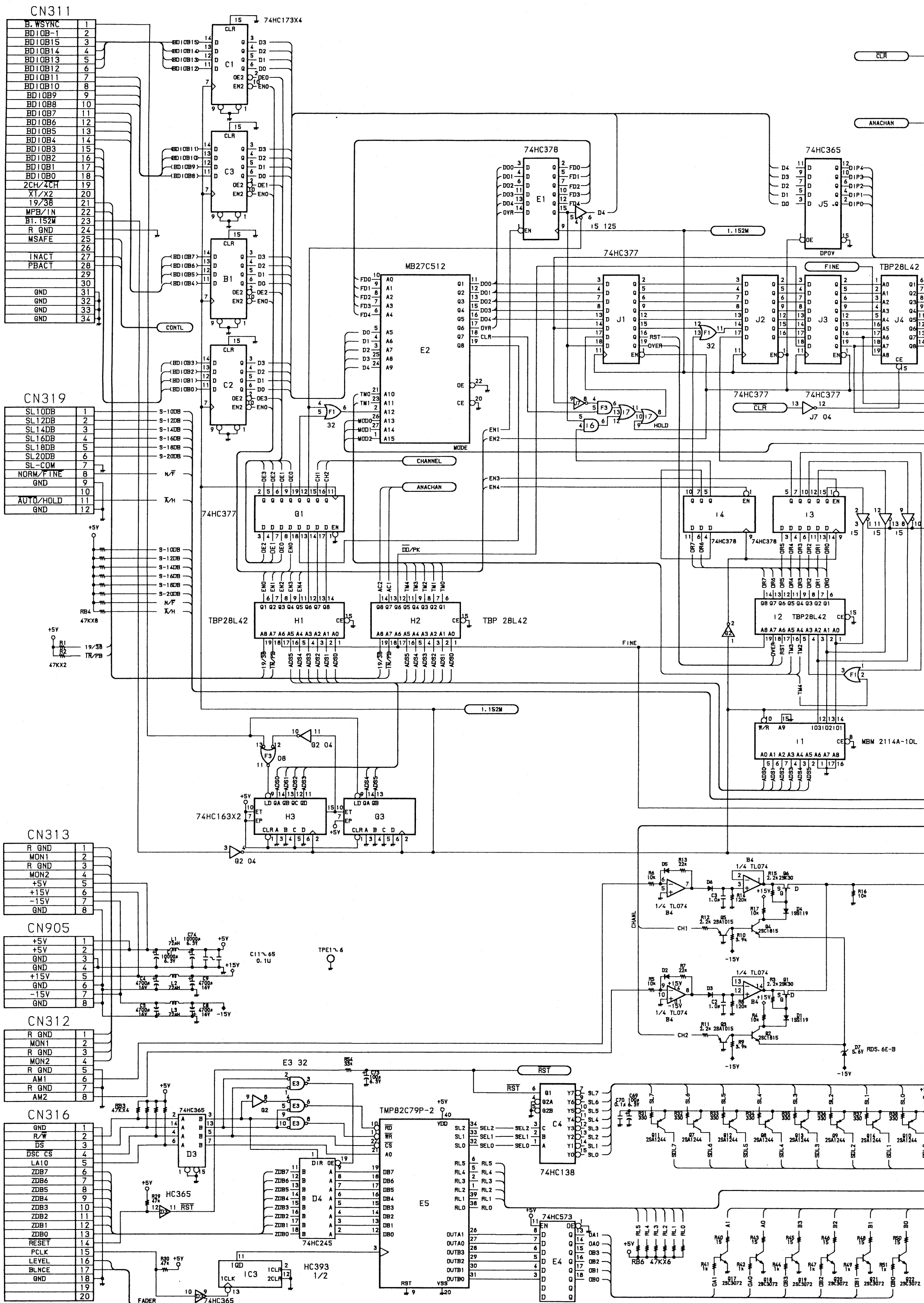


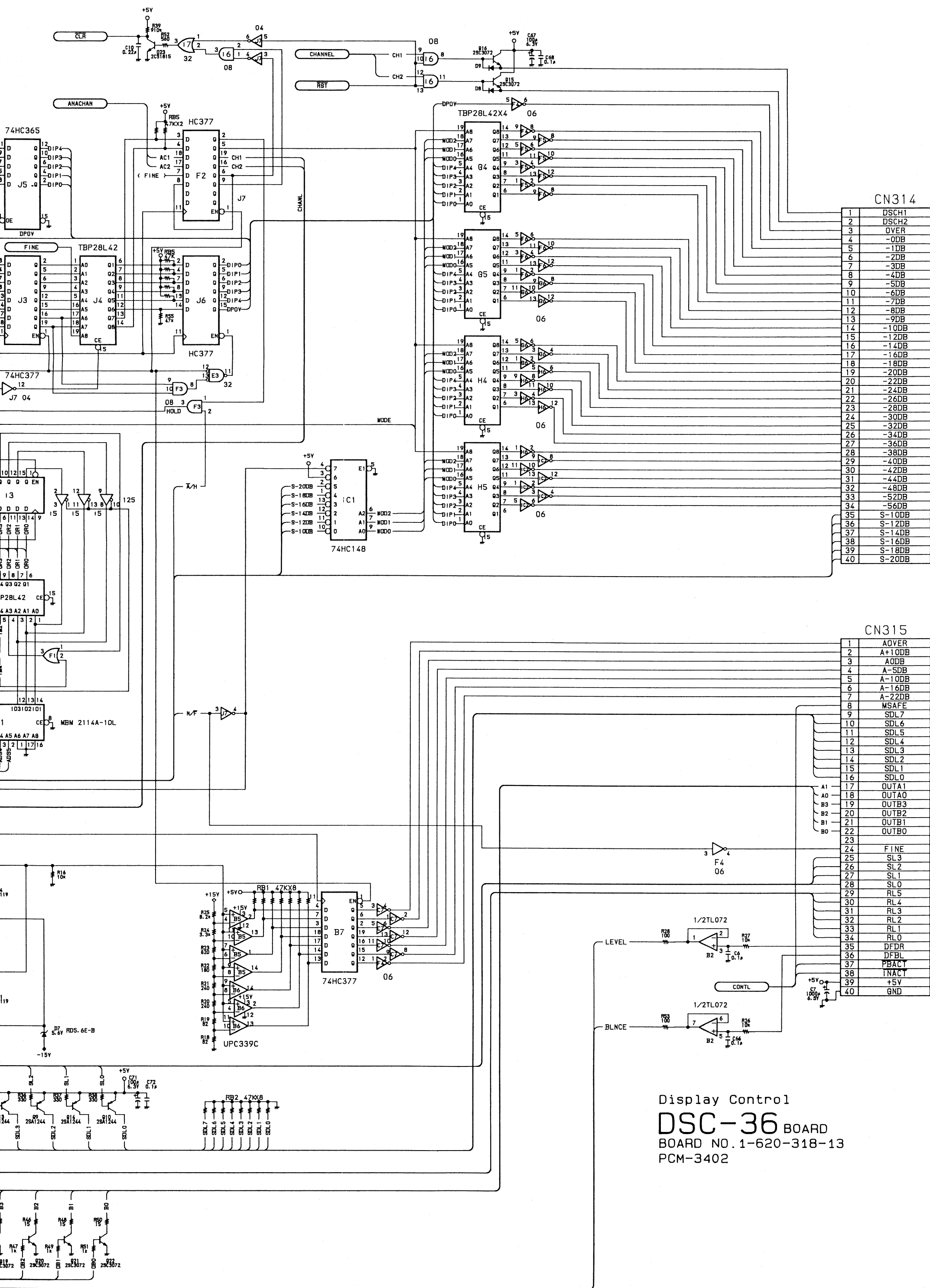


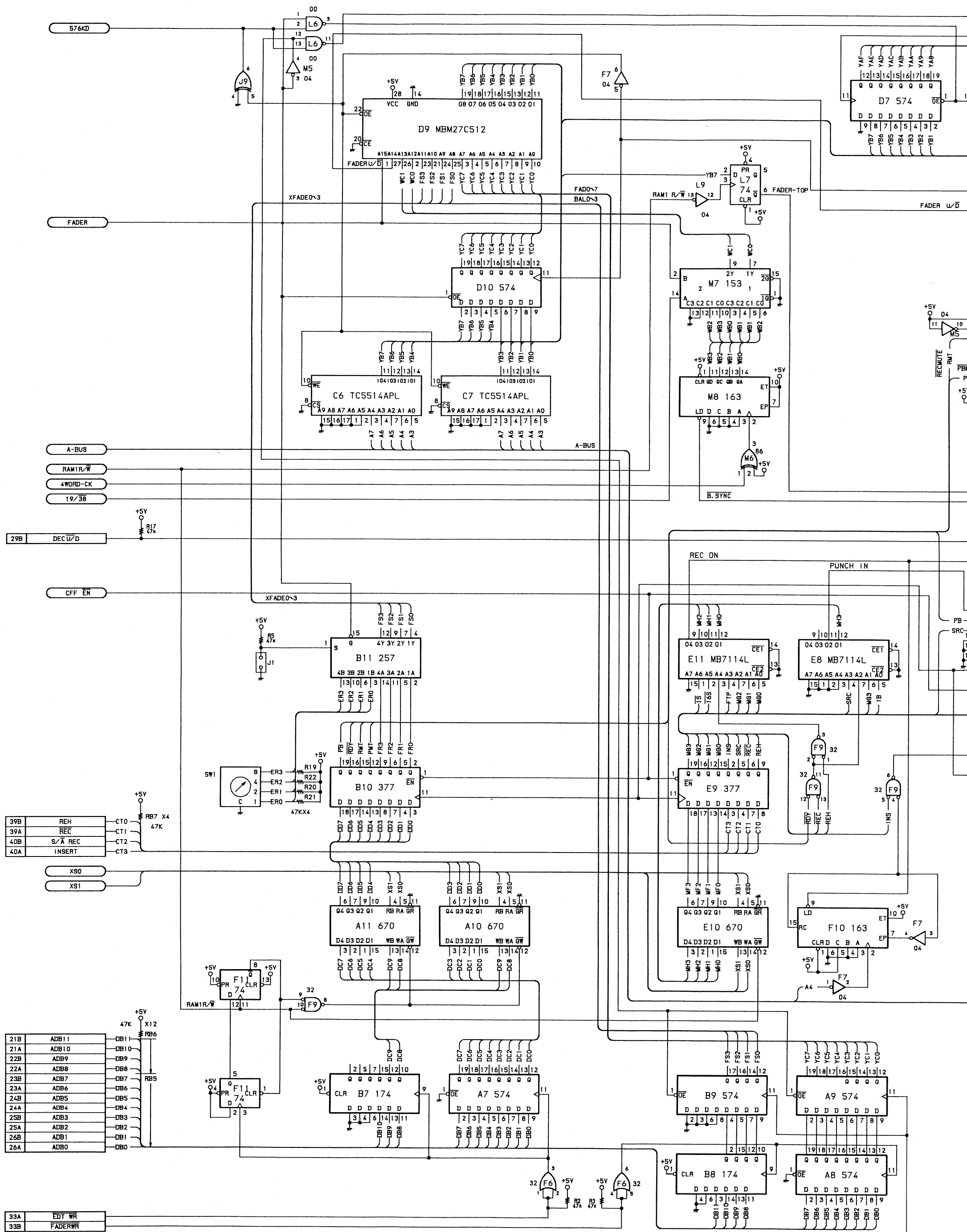


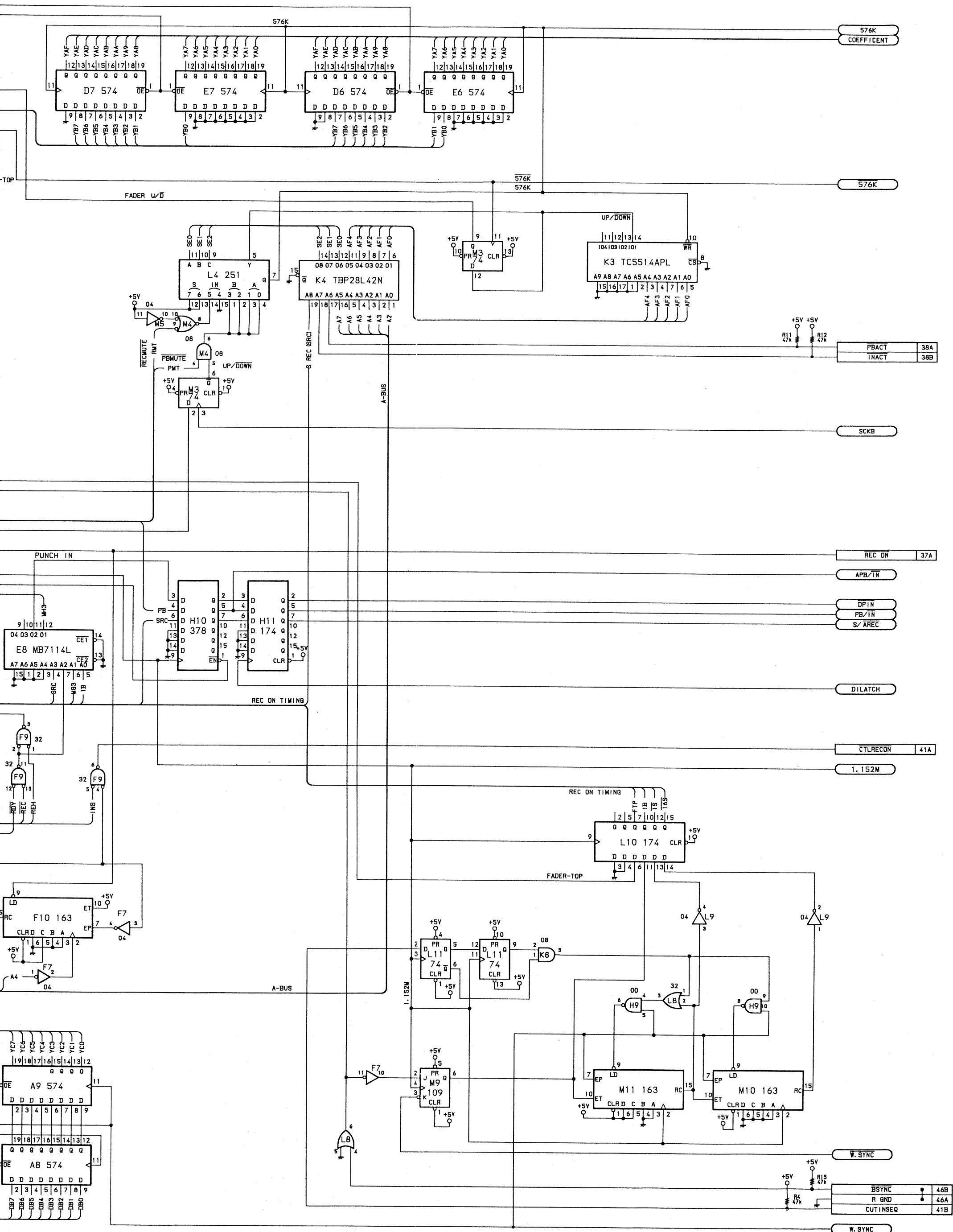
Edit 1

ED-16 BOARD (1/2)
BOARD NO. 1-620-308-14
PCM-3402







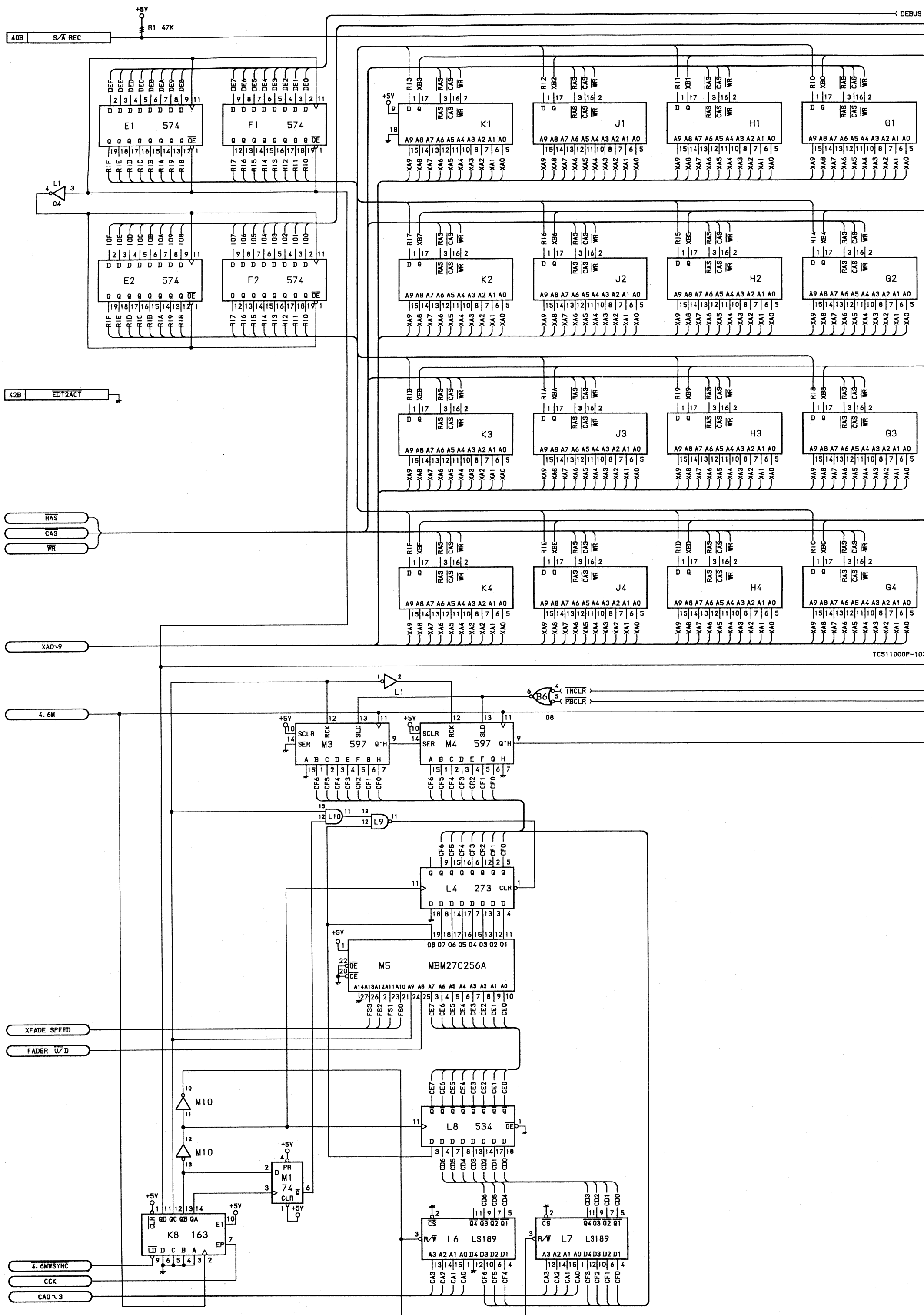


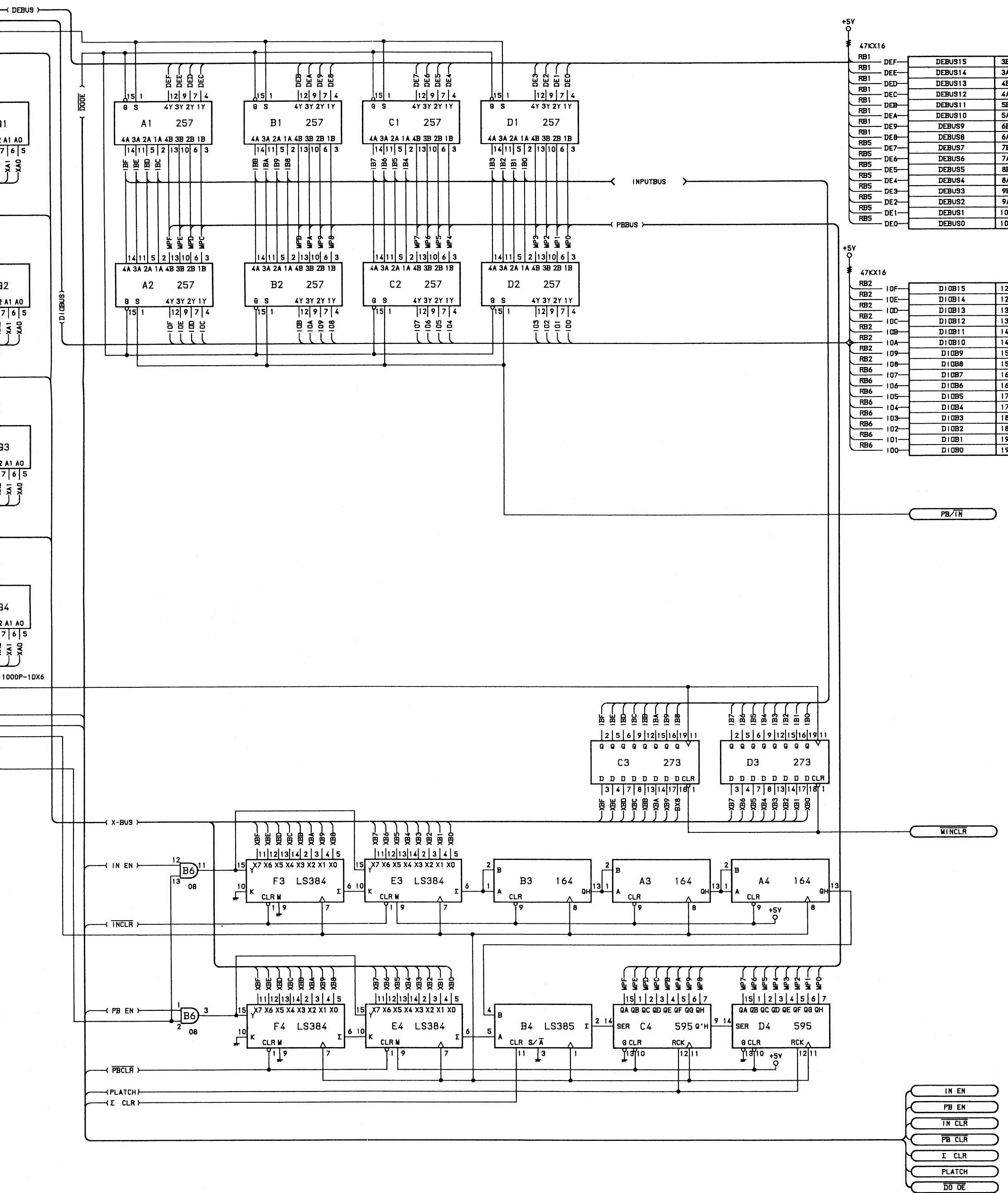
Edit 1

ED-16 BOARD (2/2)

BOARD NO. 1-620-308-14

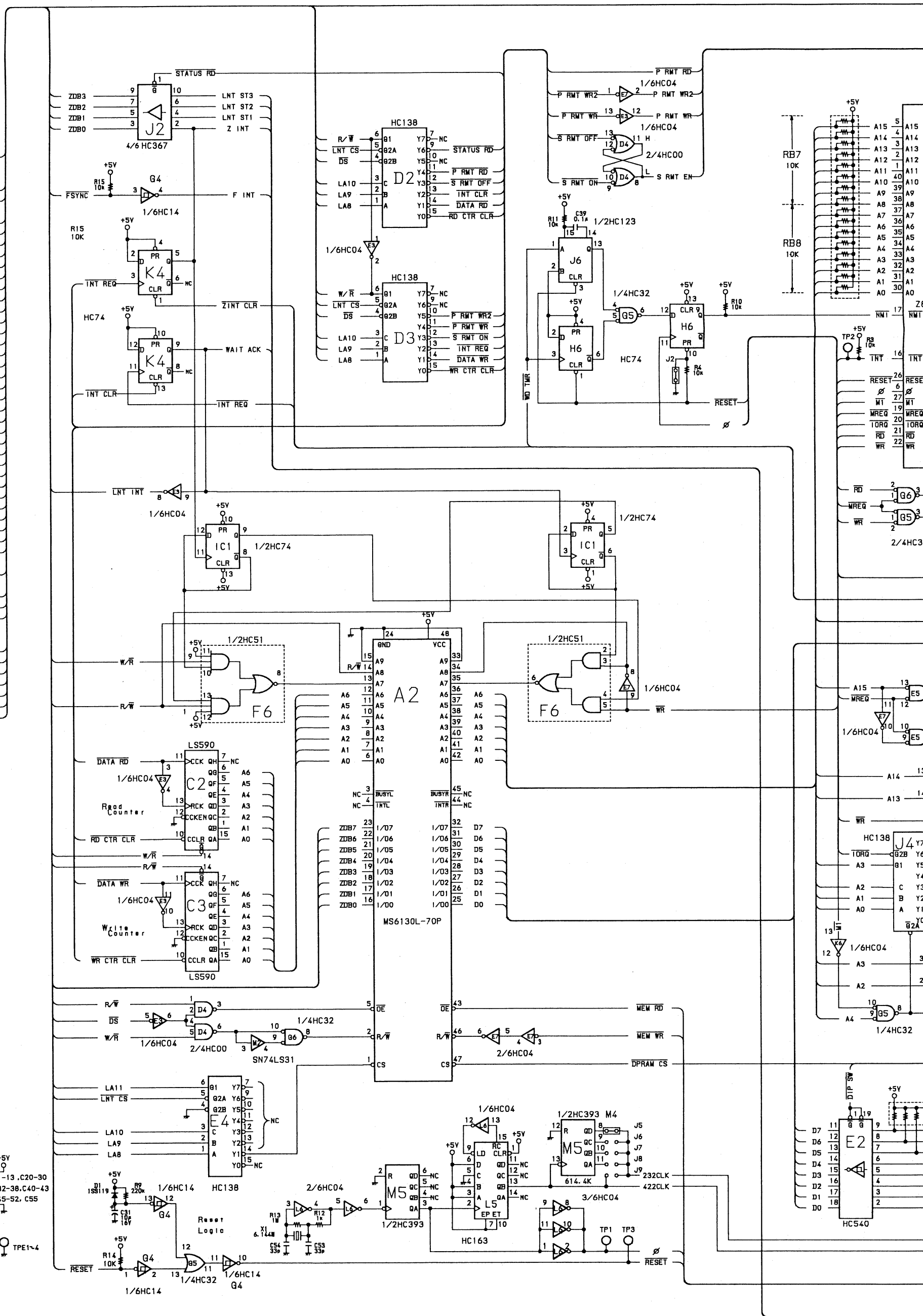
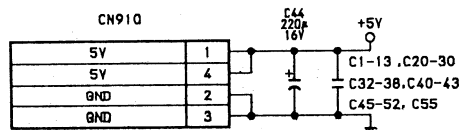
DCM-3102

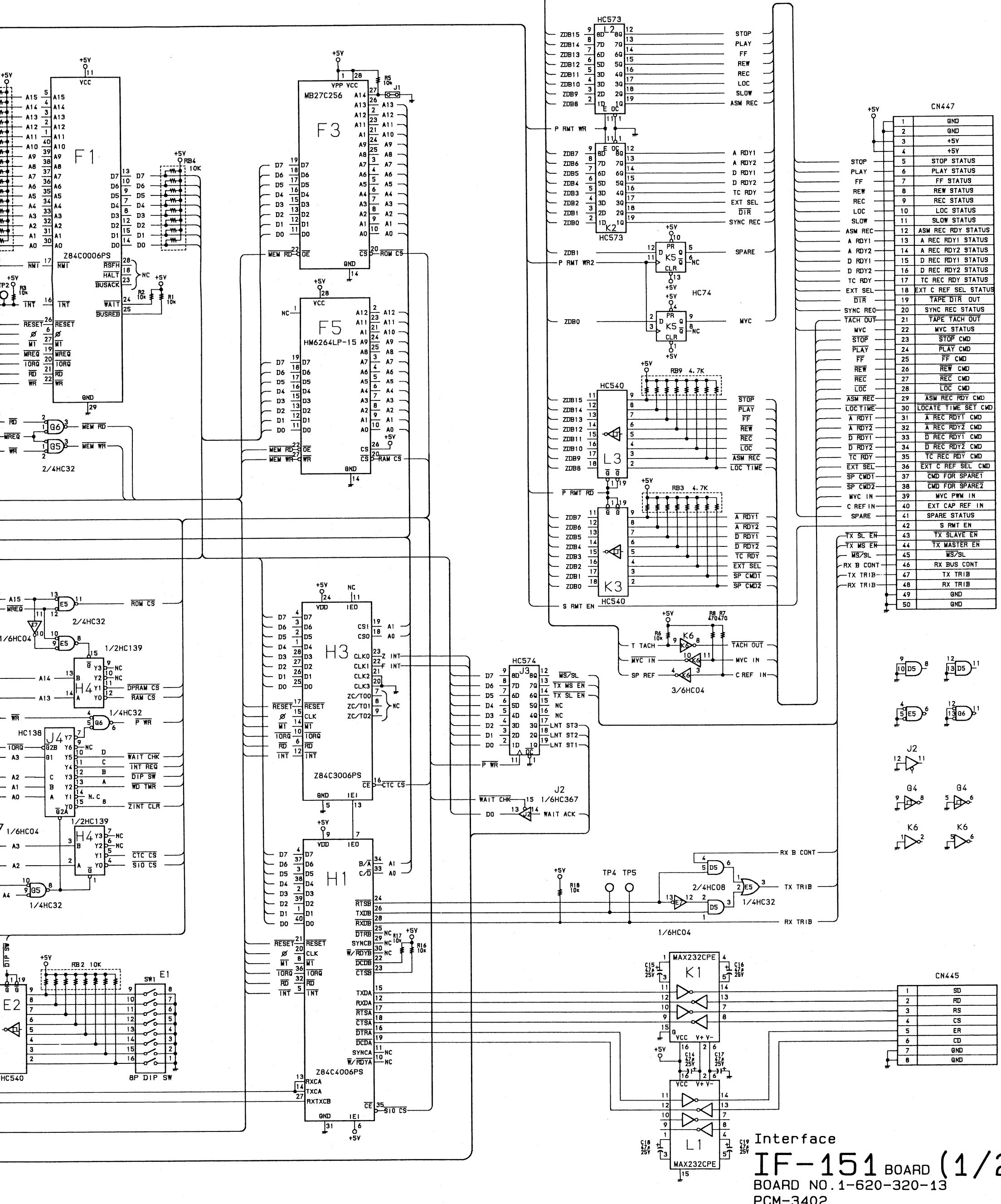




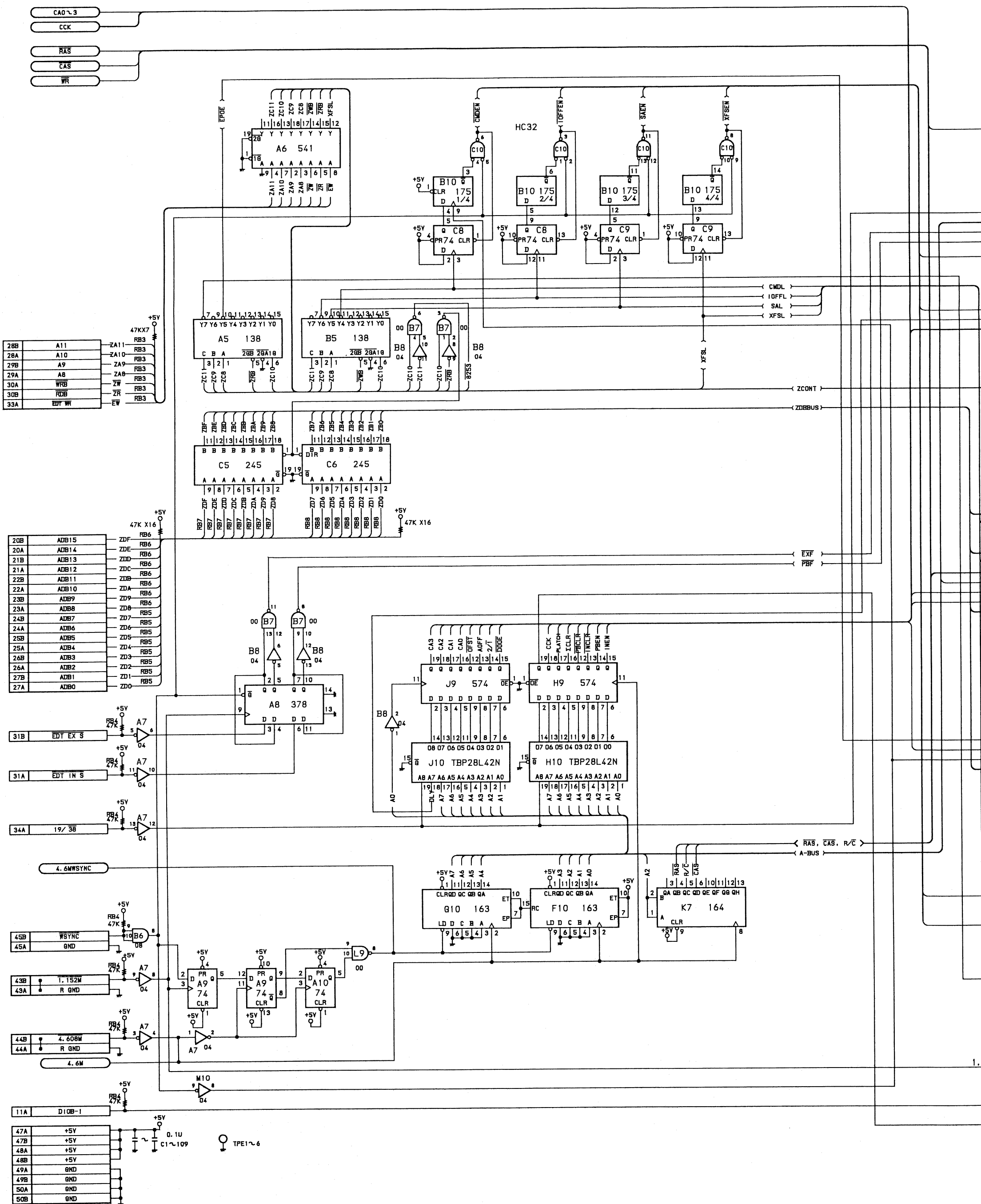
Edit 2

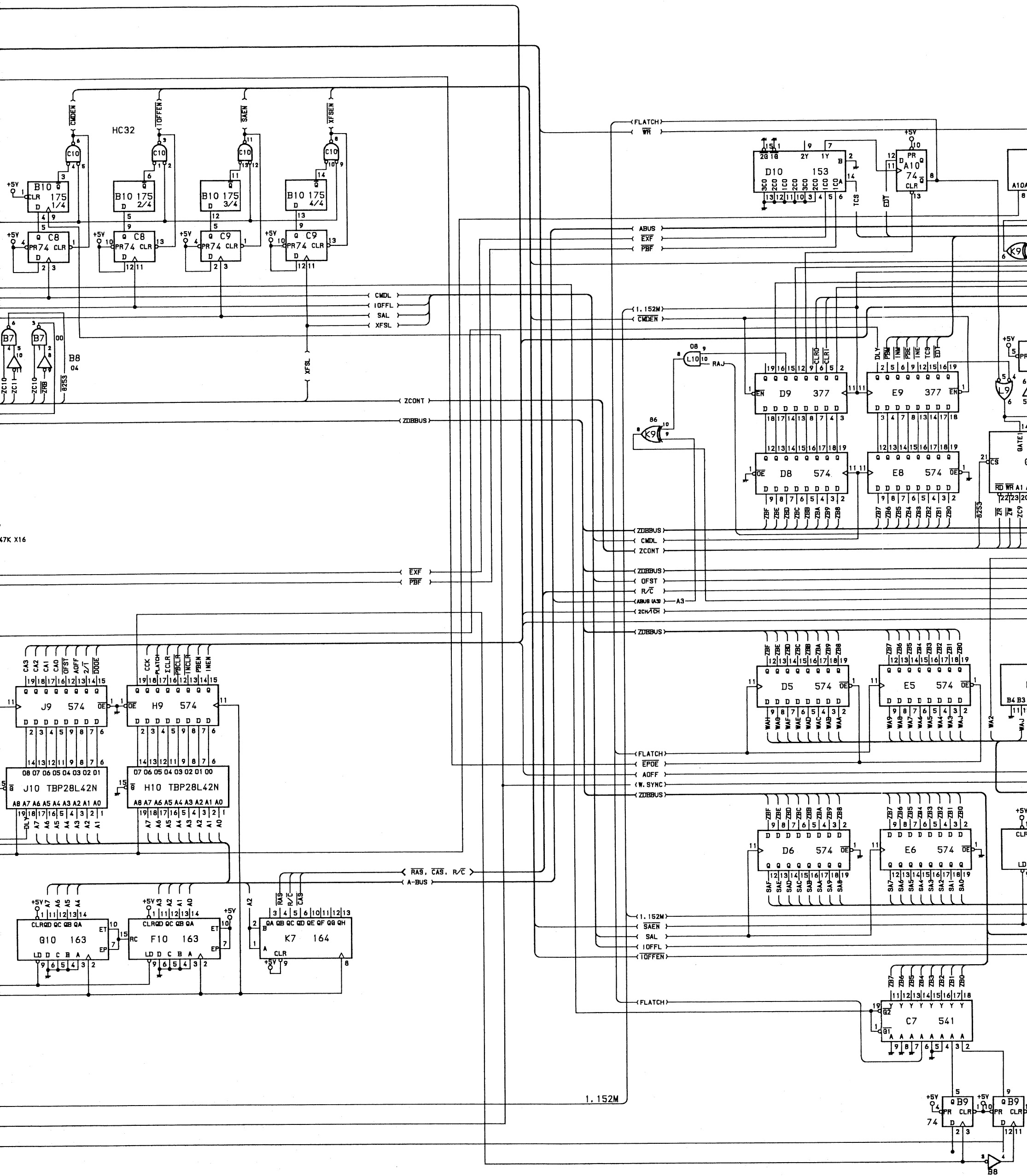
ED-17 BOARD (1/2)
BOARD NO. 1-620-309-13
PCM-3402

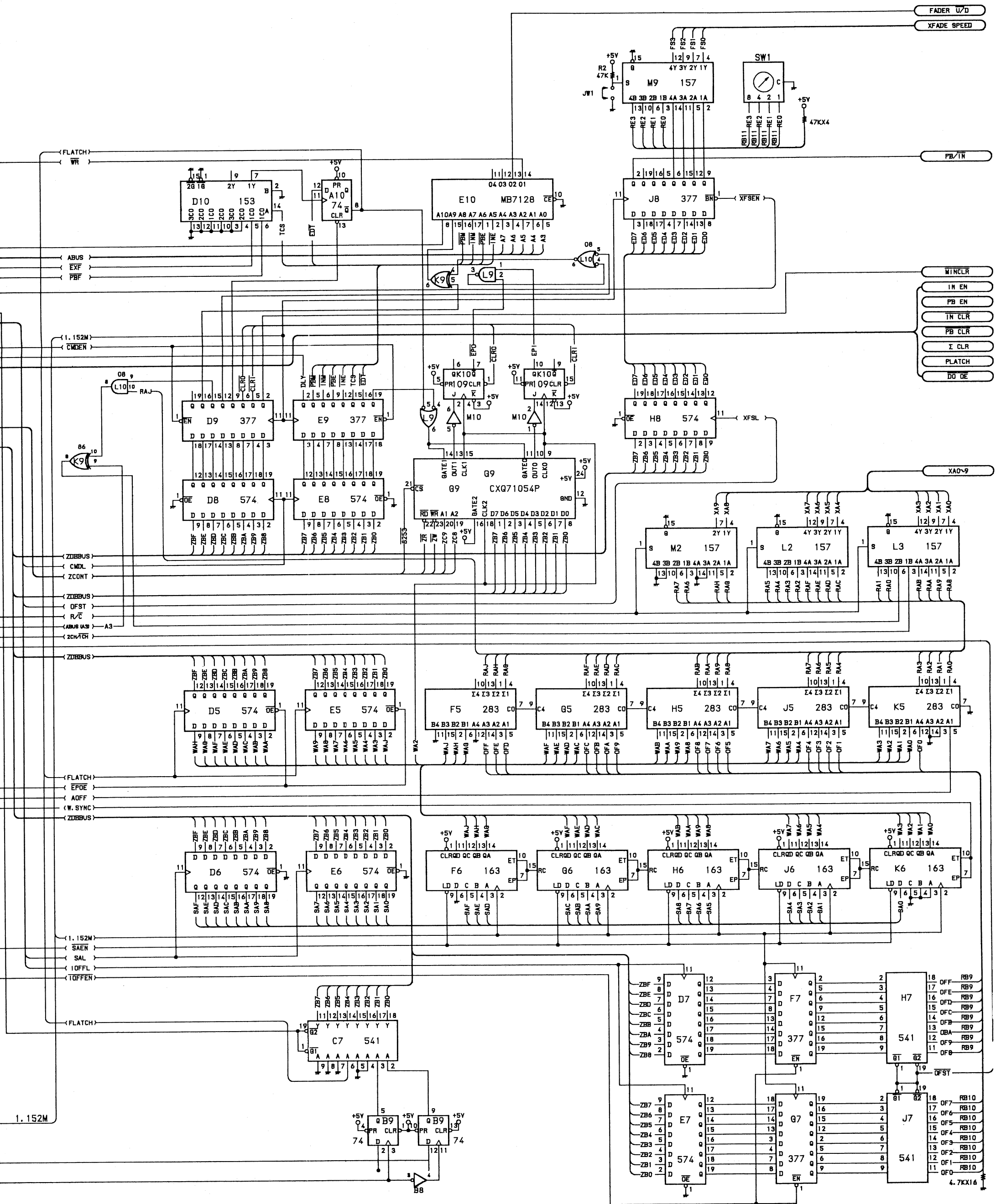




Interface
IF-151 BOARD (1/2)
BOARD NO. 1-620-320-13
PCM-3402

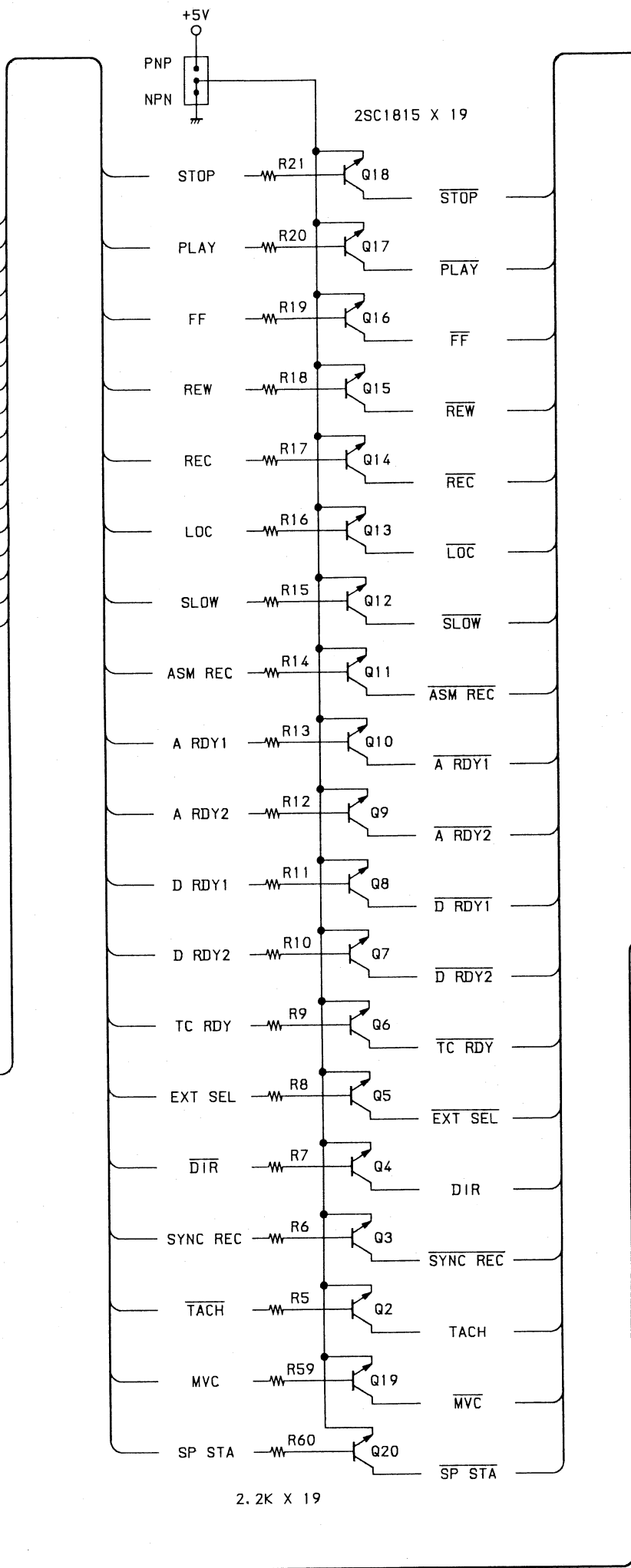
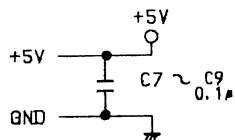




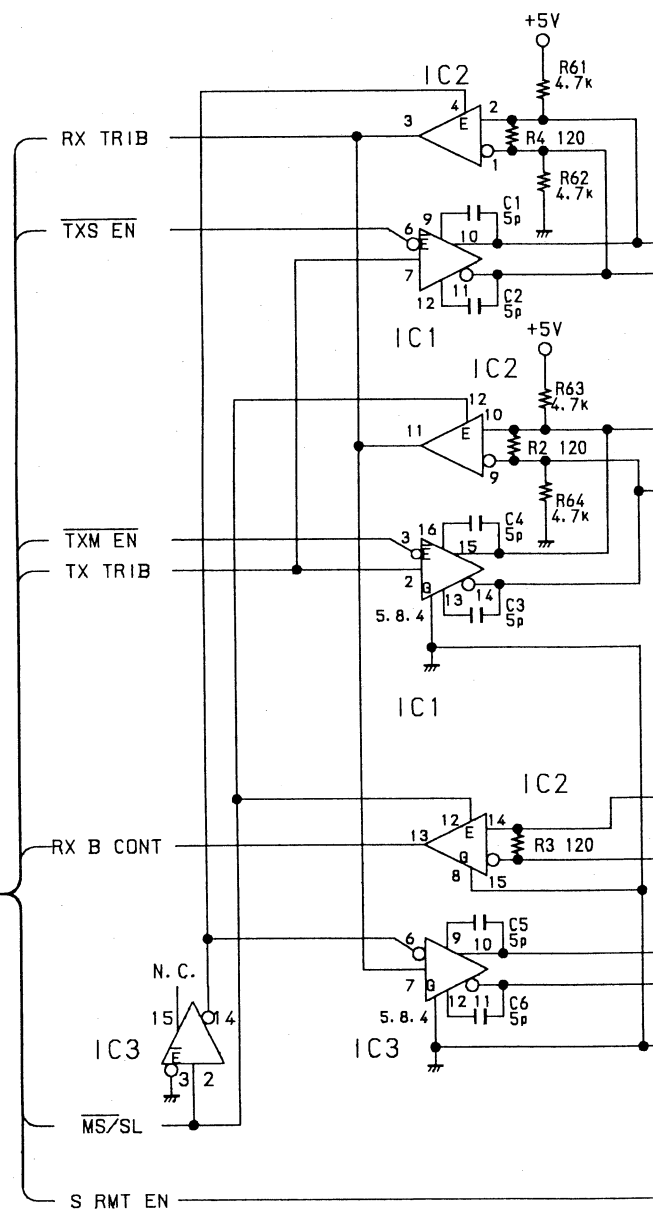
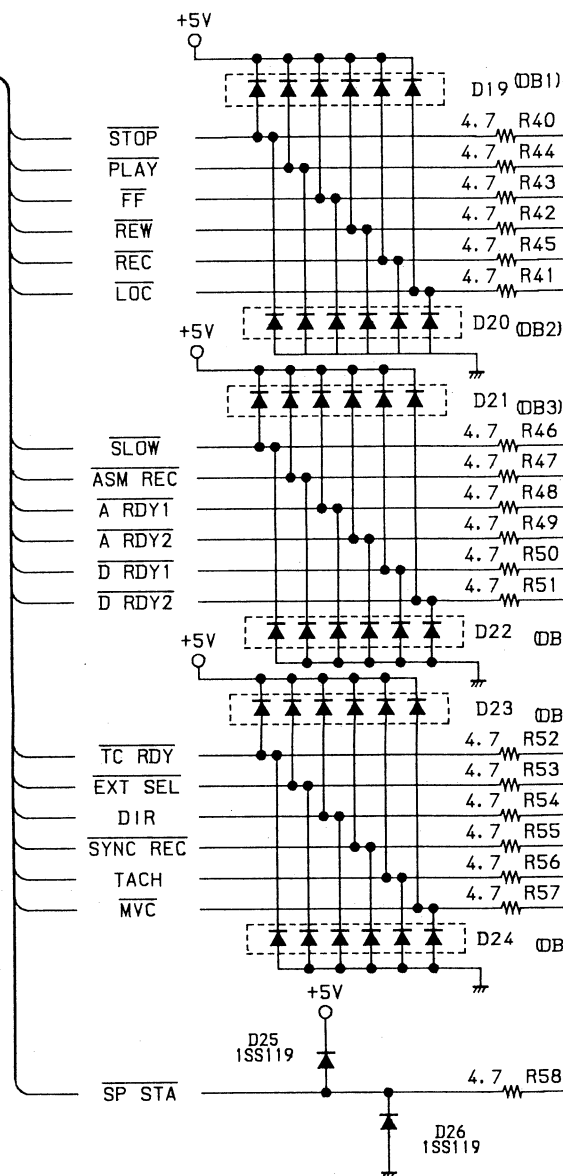
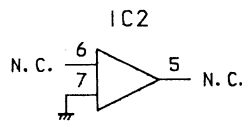


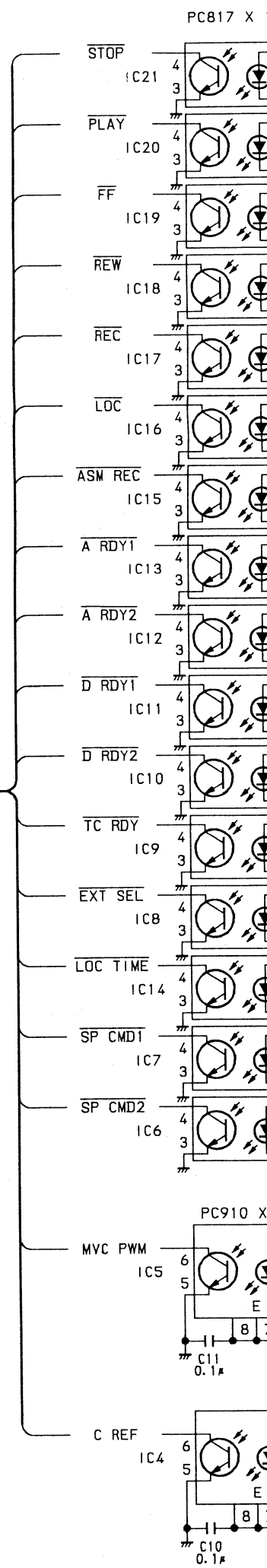
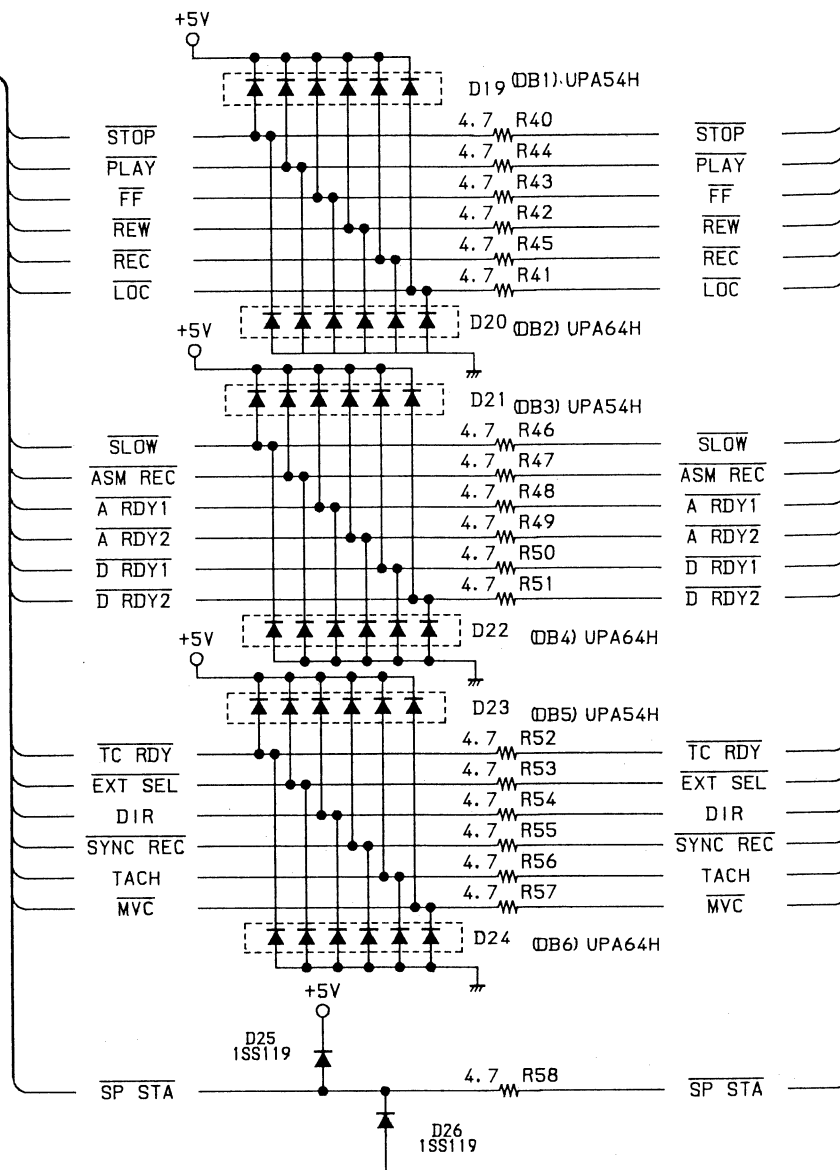
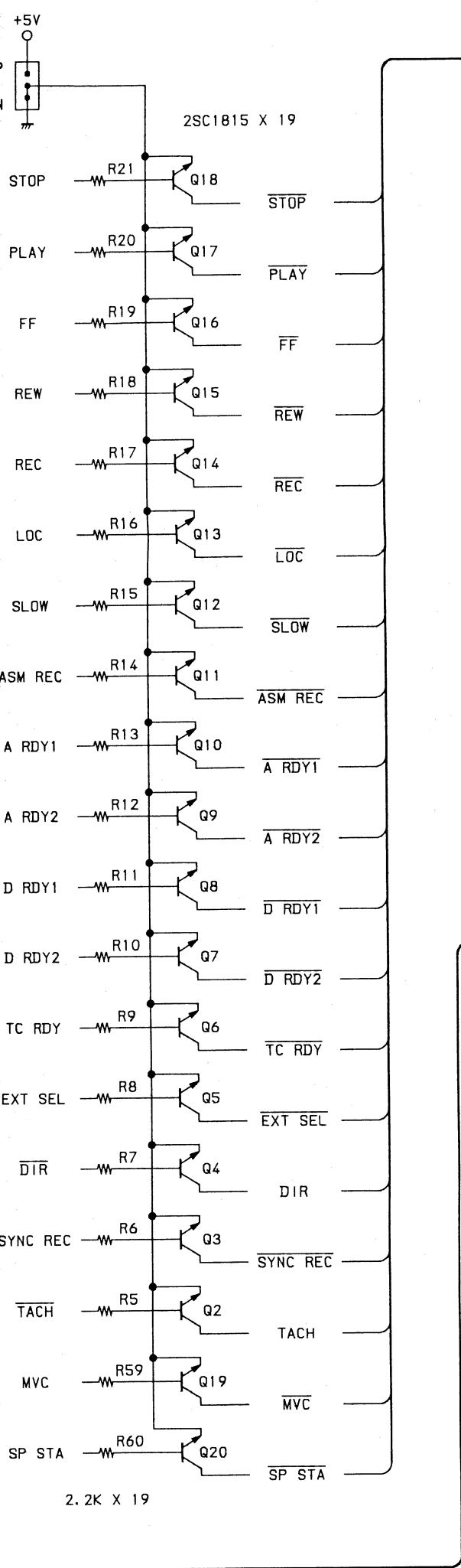
Edit 2
ED-17 BOARD (2/2)
 BOARD NO. 1-620-309-13
 PCM-3402

CN449	
GND	1
GND	2
+5V	3
+5V	4
STOP STATUS	5
PLAY STATUS	6
FF STATUS	7
REW STATUS	8
REC STATUS	9
LOC STATUS	10
SLOW STATUS	11
ASM REC RDY STATUS	12
A REC RDY1 STATUS	13
A REC RDY2 STATUS	14
D REC RDY1 STATUS	15
D REC RDY2 STATUS	16
TC REC RDY STATUS	17
EXT C REF SEL STATUS	18
TAPE DIR OUT	19
SYNC REC STATUS	20
TAPE TACH OUT	21
MVC STATUS	22
STOP CMD	23
PLAY CMD	24
FF CMD	25
REW CMD	26
REC CMD	27
LOC CMD	28
ASM REC RDY CMD	29
LOCATE TIME SET CMD	30
A REC RDY1 CMD	31
A REC RDY2 CMD	32
D REC RDY1 CMD	33
D REC RDY2 CMD	34
TC REC RDY CMD	35
EXT C REF SEL CMD	36
CMD FOR SPARE1	37
CMD FOR SPARE2	38
MVC PWM IN	39
EXT CAP REF IN	40
SPARE STATUS	41
S RMT EN	42
TX SLAVE EN	43
TX MASTER EN	44
MS/SL	45
RX BUS CONT	46
TX TRIB	47
RX TRIB	48
GND	49
GND	50

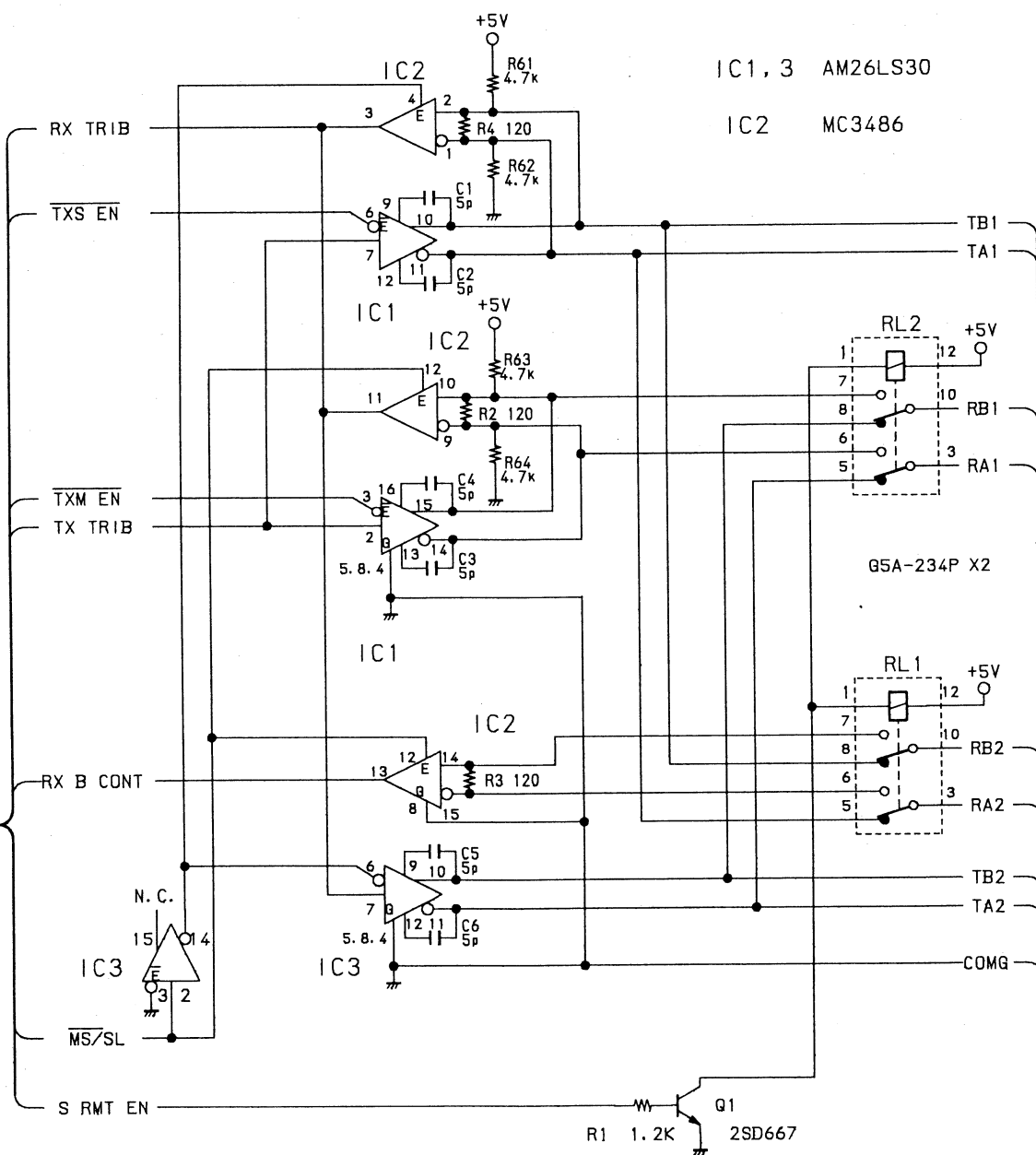
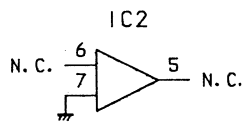


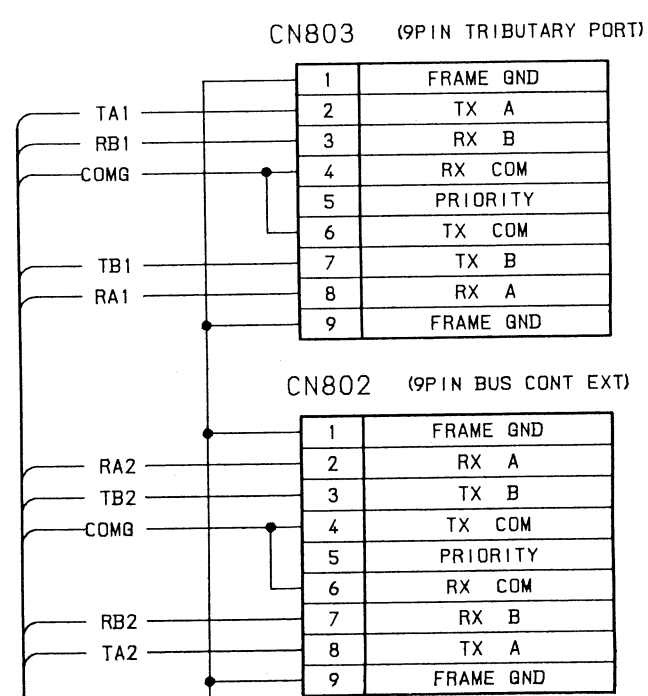
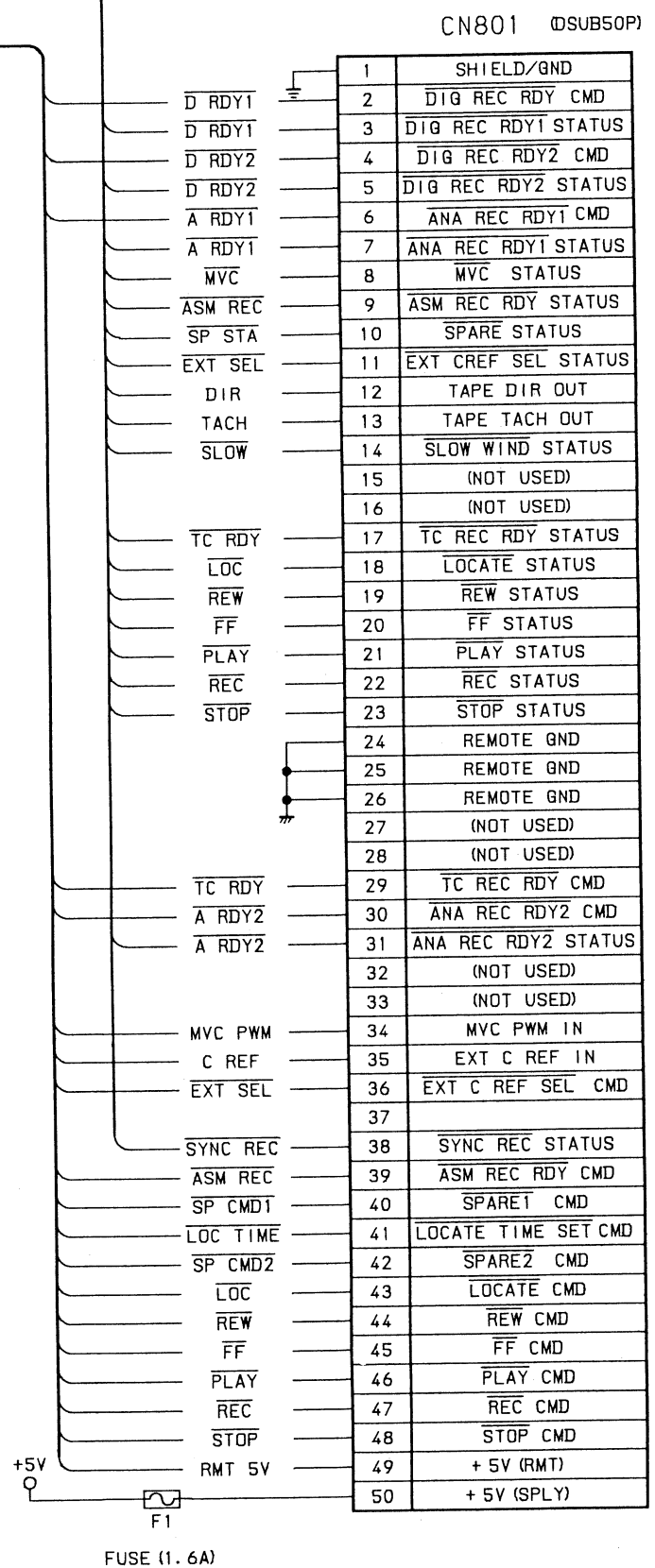
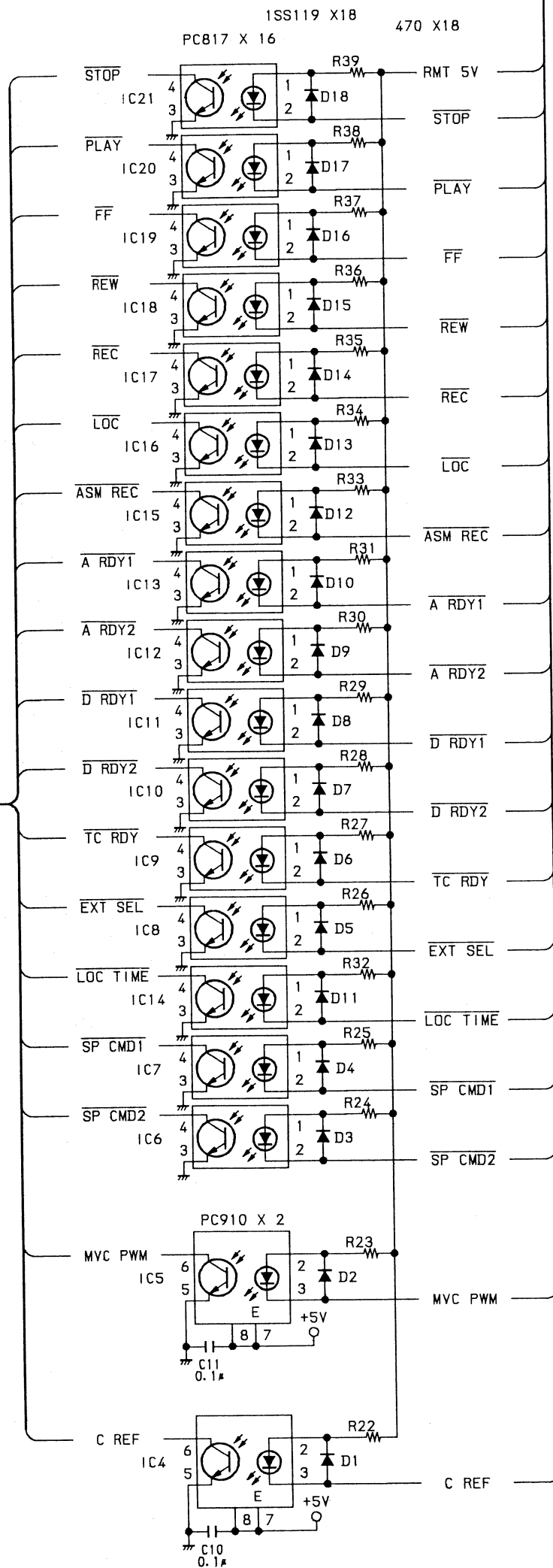
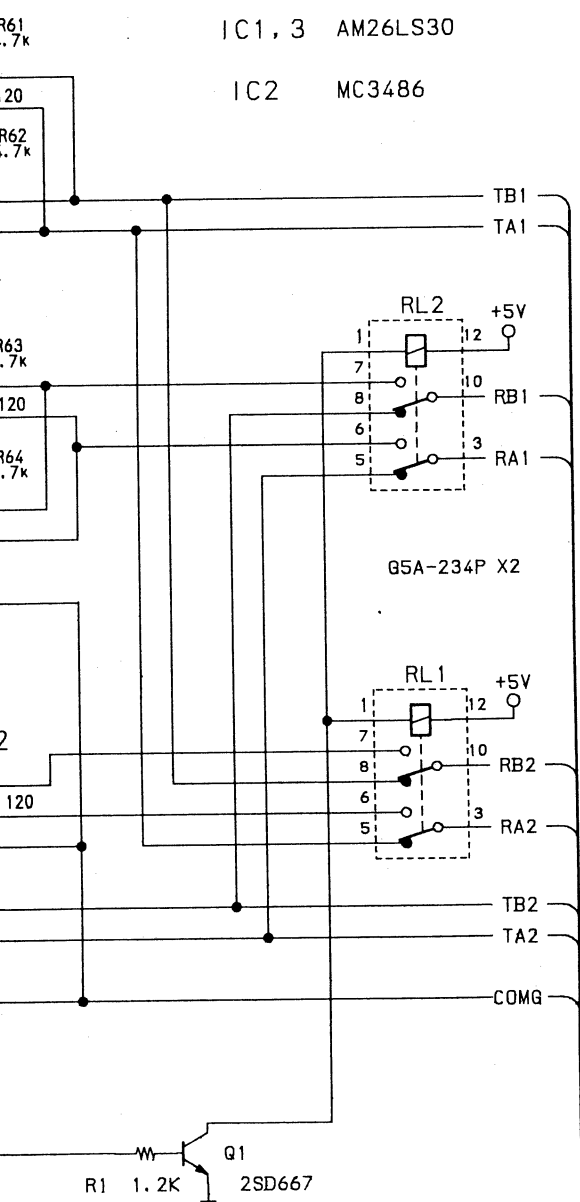
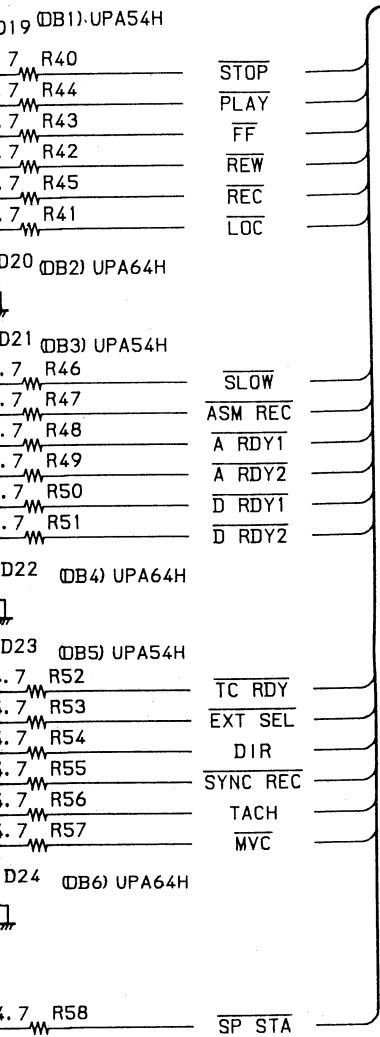
REF. NO	TYPE	+5V	GND
IC1	AM26LS30	1	8
IC2	MC3486	16	8
IC3	AM26LS30	1	8
IC4	PC910	8	5
IC5	PC910	8	5





	+5V	GND
0	1	8
	16	8
0	1	8
	8	5
	8	5

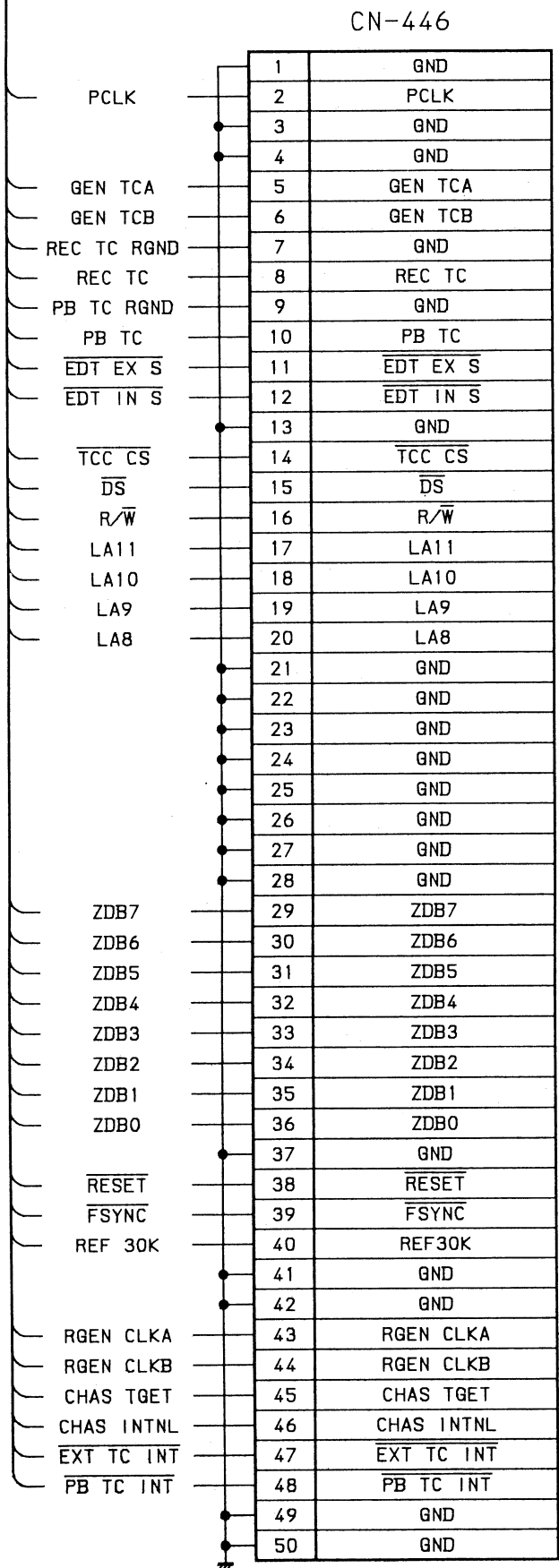




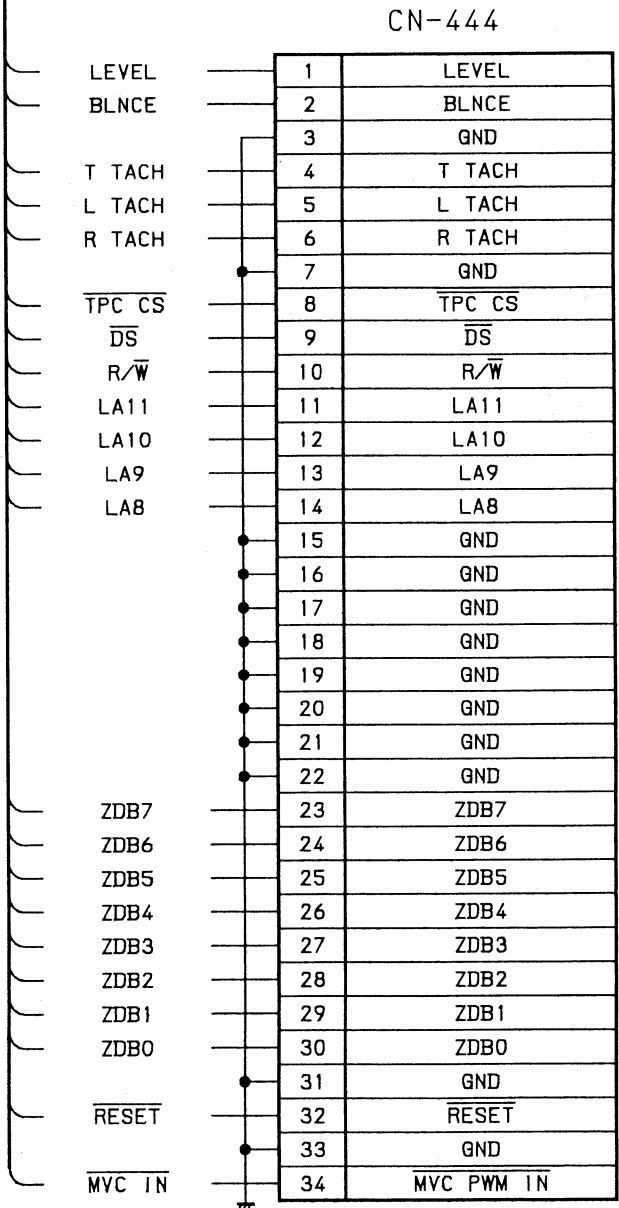
Interface
IF-152 BOARD
BOARD NO. 1-620-333-14
PCM-3402

PCM-3402 50PIN REMOTE

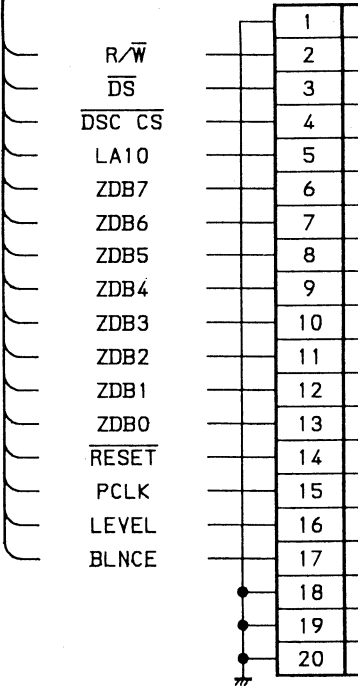
FROM IF151 1/2
CPU EXT BUS



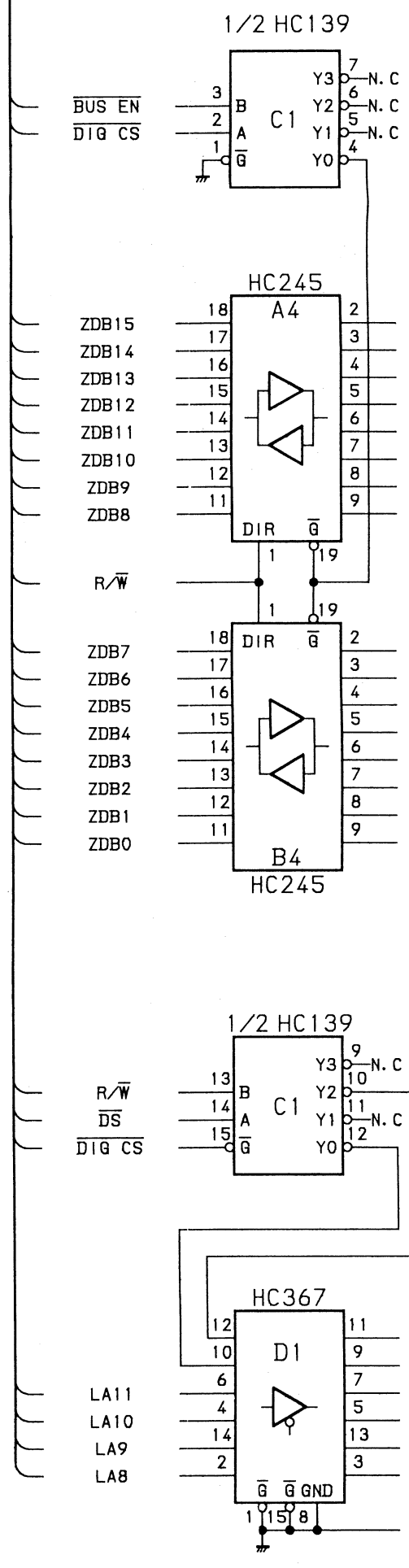
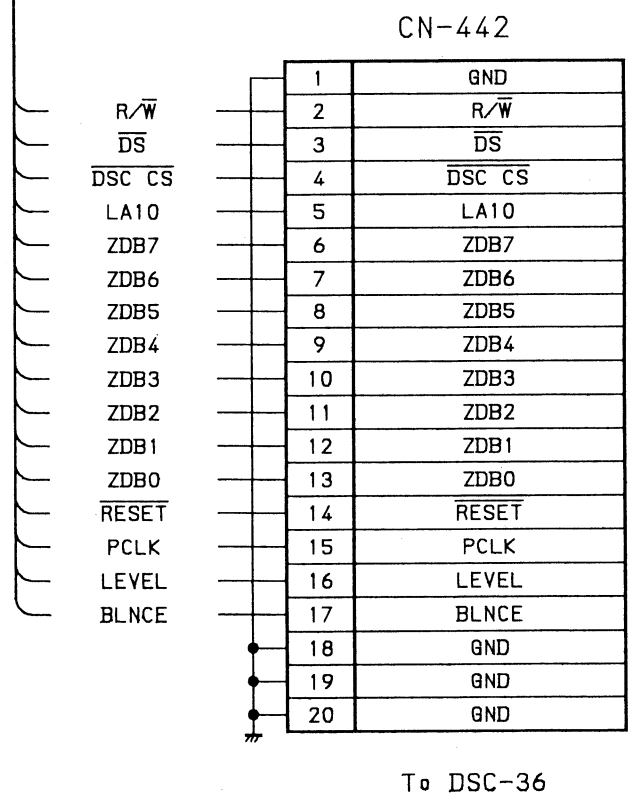
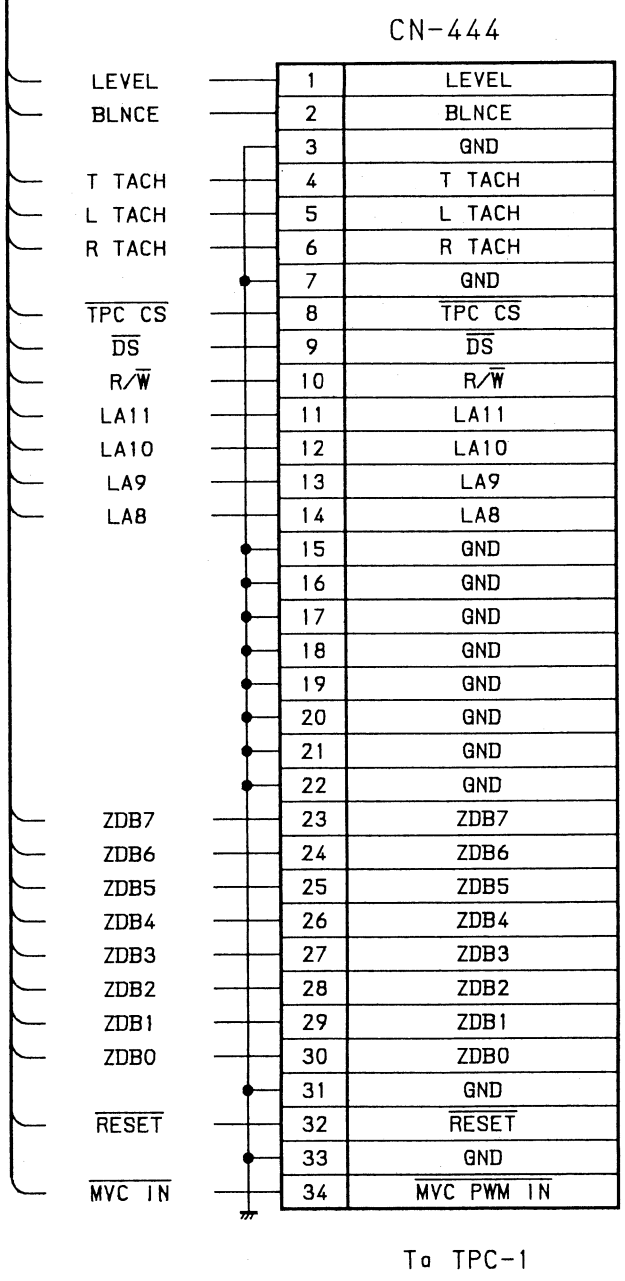
To IF-153



To TPC-1



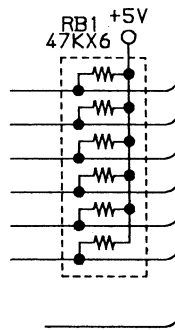
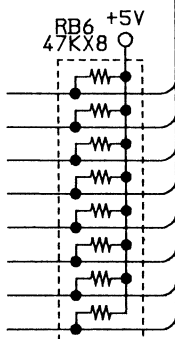
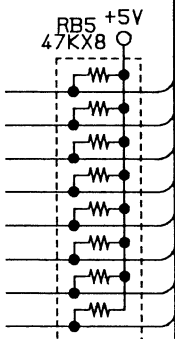
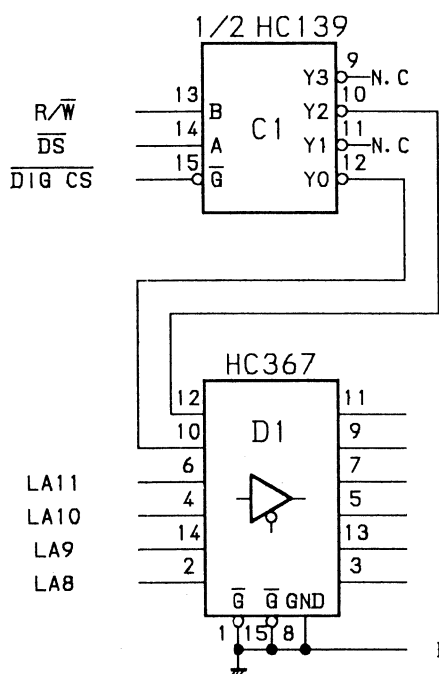
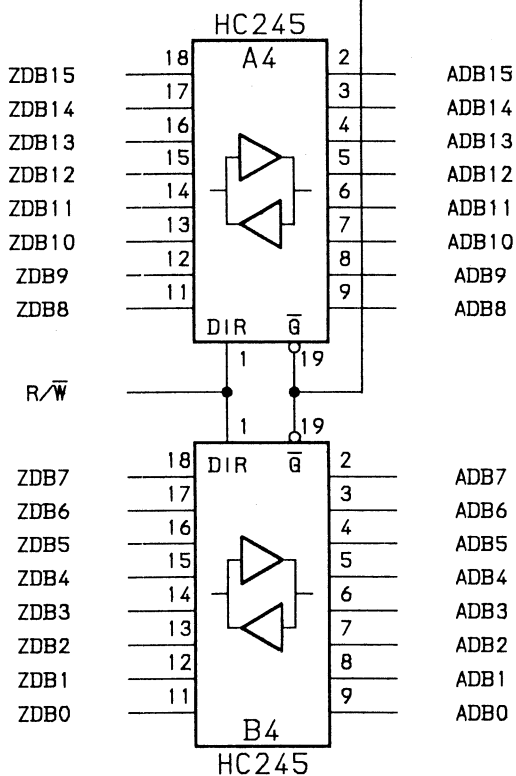
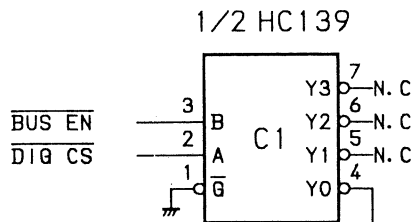
6
0
K
0
0
CA
CB
0
TC
0
C
X S
N S
0
CS
0
W
1
0
7
3
0
0
0
0
0
7
6
5
4
3
2
1
0
0
ET
NC
IOK
0
0
CLKA
CLKB
TGET
NTNL
C INT
INT
D
D



CN-442

1	GND
2	R/W
3	DS
4	DSC CS
5	LA10
6	ZDB7
7	ZDB6
8	ZDB5
9	ZDB4
10	ZDB3
11	ZDB2
12	ZDB1
13	ZDB0
14	RESET
15	PCLK
16	LEVEL
17	BLNCE
18	GND
19	GND
20	GND

To DSC-36

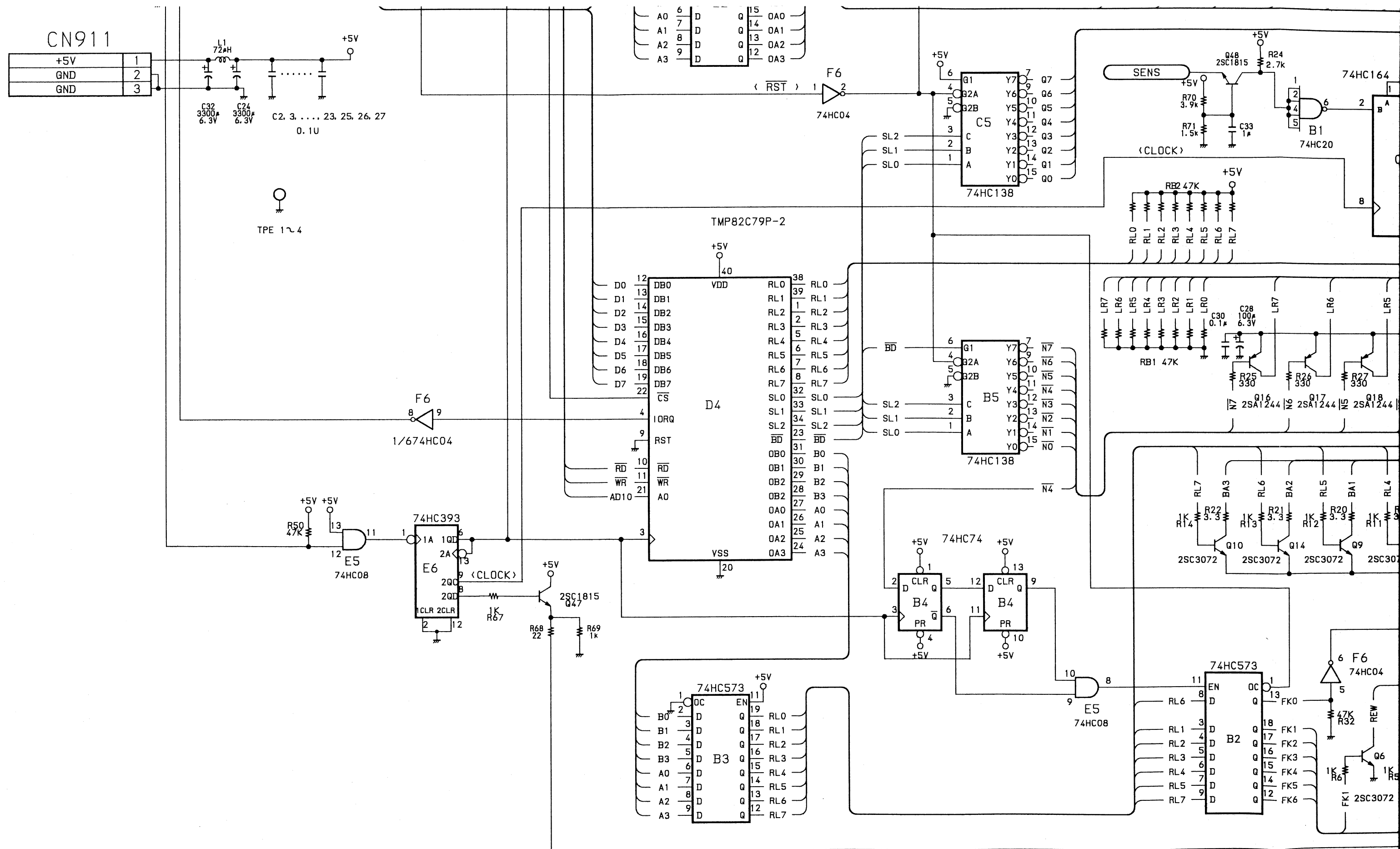


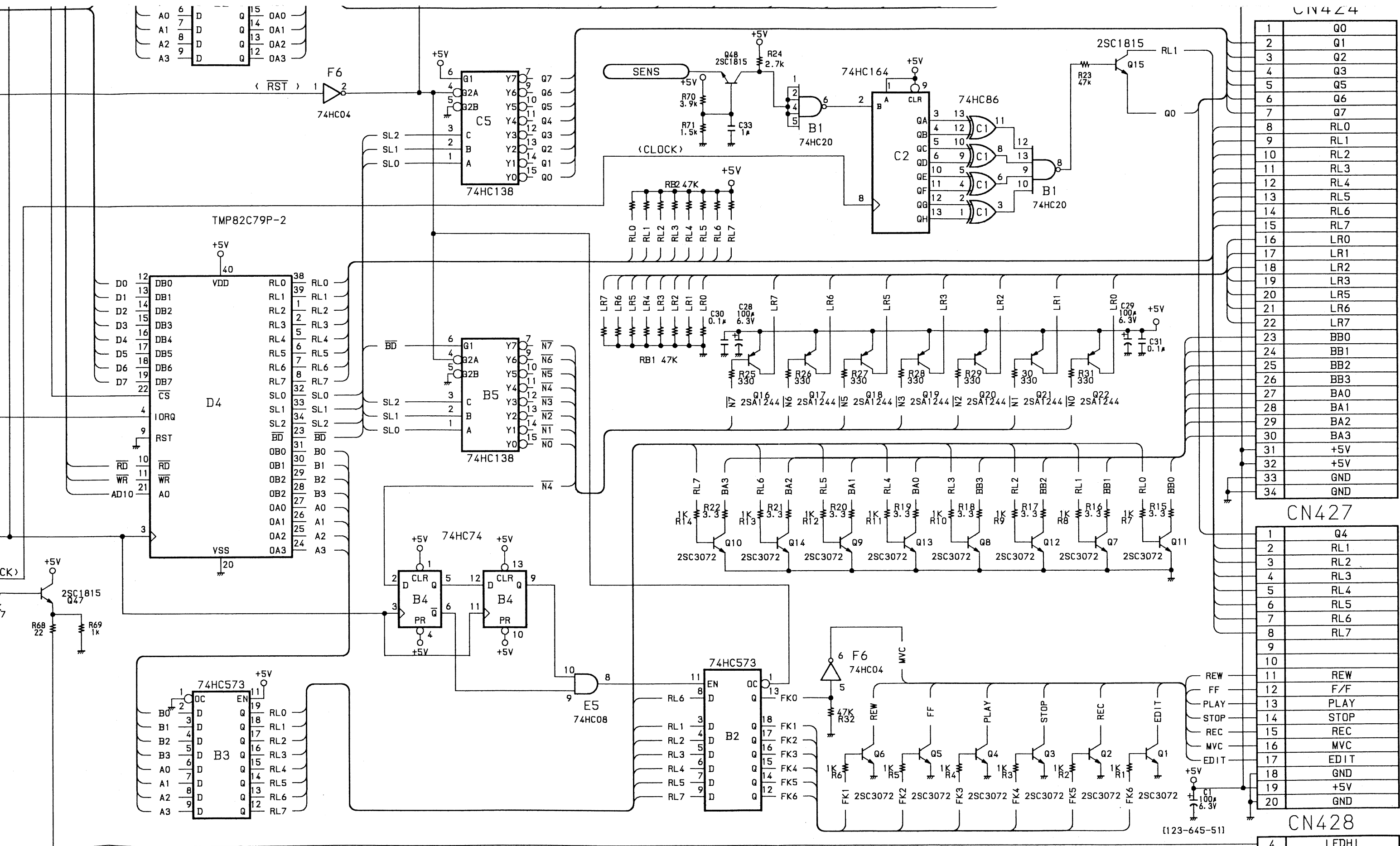
CN-443

REC TC RGND	1	R GND
REC TC	2	REC TC
PB TC RGND	3	R GND
PB TC	4	PB TC
EDT IN S	5	EDT IN S
EDT EX S	6	EDT EX S
DIG RGND	7	R GND
RDB	8	RDB
DIG RGND	9	R GND
WRB	10	WRB
A11	11	A11
A10	12	A10
A9	13	A9
A8	14	A8
ADB15	15	ADB15
ADB14	16	ADB14
ADB13	17	ADB13
ADB12	18	ADB12
ADB11	19	ADB11
ADB10	20	ADB10
ADB9	21	ADB9
ADB8	22	ADB8
ADB7	23	ADB7
ADB6	24	ADB6
ADB5	25	ADB5
ADB4	26	ADB4
ADB3	27	ADB3
ADB2	28	ADB2
ADB1	29	ADB1
ADB0	30	ADB0
	31	GND
B PDI	32	B PDI
FSYNC	33	FSYNC
REF 30K	34	REF 30K
	35	GND
SP REF	36	SP REF
	37	GND
	38	GND
	39	GND
	40	GND

To MB-143

Interface
IF-151 BOARD (2/2)
BOARD NO. 1-620-320-13
PCM-3402





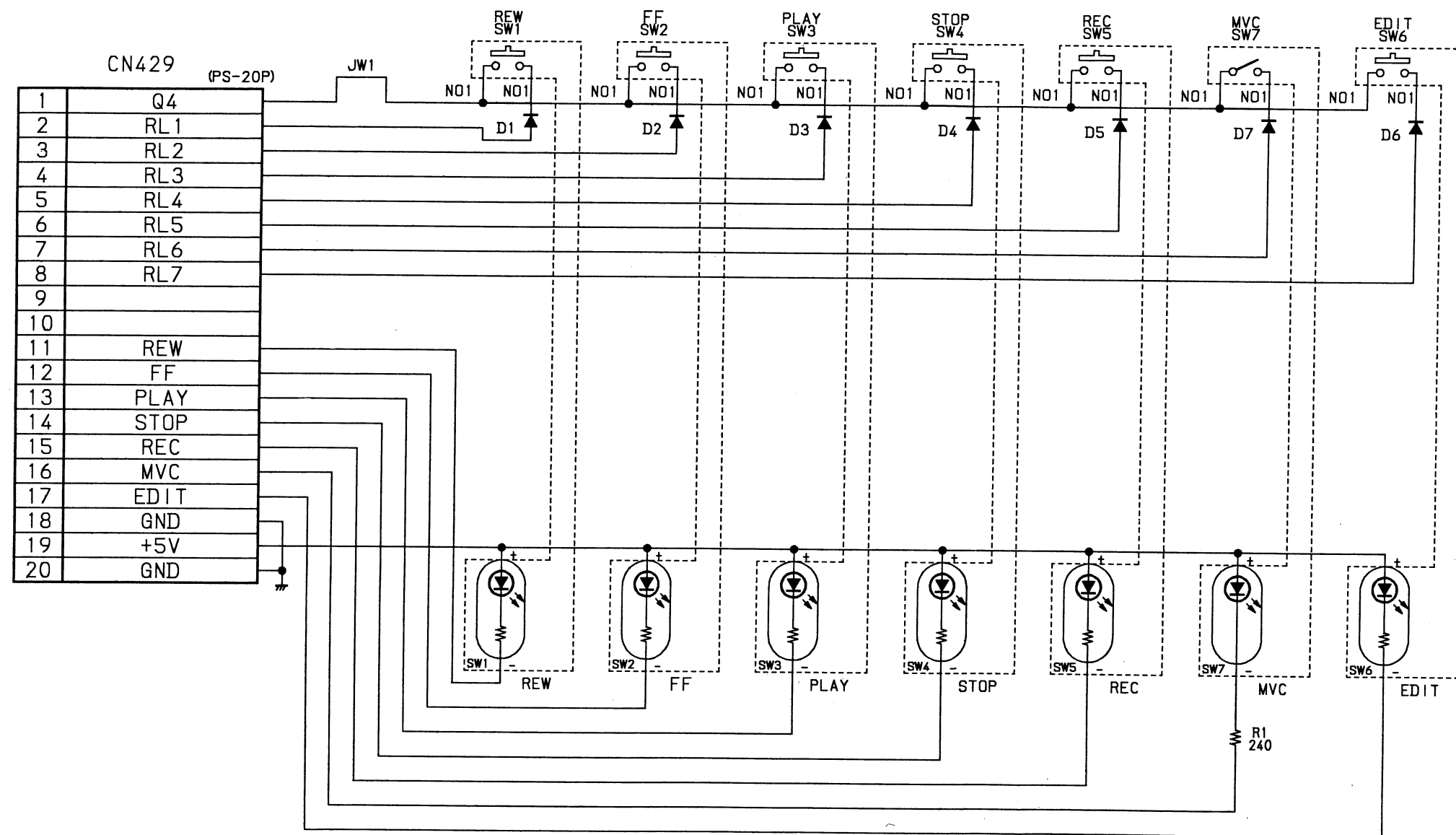
Key Control
KC-15 BOARD
 BOARD NO.1-620-321-13
 PCM-3402

C-25

CN424	
1	Q0
2	Q1
3	Q2
4	Q3
5	Q5
6	Q6
7	Q7
8	RL0
9	RL1
10	RL2
11	RL3
12	RL4
13	RL5
14	RL6
15	RL7
16	LR0
17	LR1
18	LR2
19	LR3
20	LR5
21	LR6
22	LR7
23	BB0
24	BB1
25	BB2
26	BB3
27	BA0
28	BA1
29	BA2
30	BA3
31	+5V
32	+5V
33	GND
34	GND

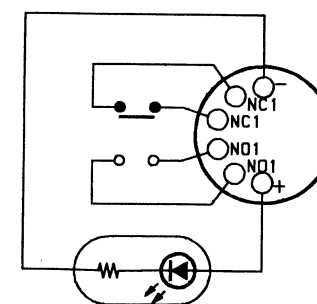
CN427	
1	Q4
2	RL1
3	RL2
4	RL3
5	RL4
6	RL5
7	RL6
8	RL7
9	
10	
11	REW
12	F/F
13	PLAY
14	STOP
15	REC
16	MVC
17	EDIT
18	GND
19	+5V
20	GND

CN428	
4	LEDHI
3	GND
2	SENS+
1	GND

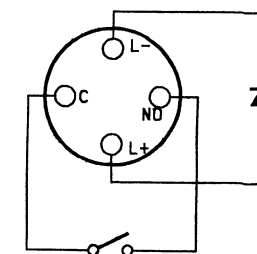


D1. D2. D3. D4. D5. D6. D7----- 1SS119
 SW1. SW2. SW3. SW4. SW5. SW6----- TYPE B
 SW7-----TYPE D

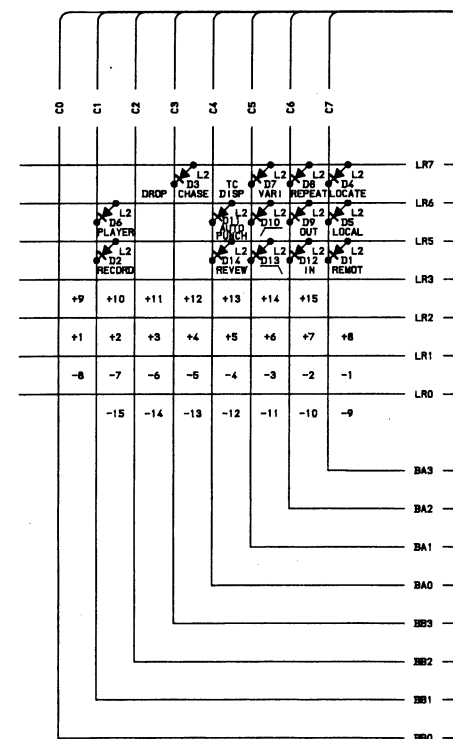
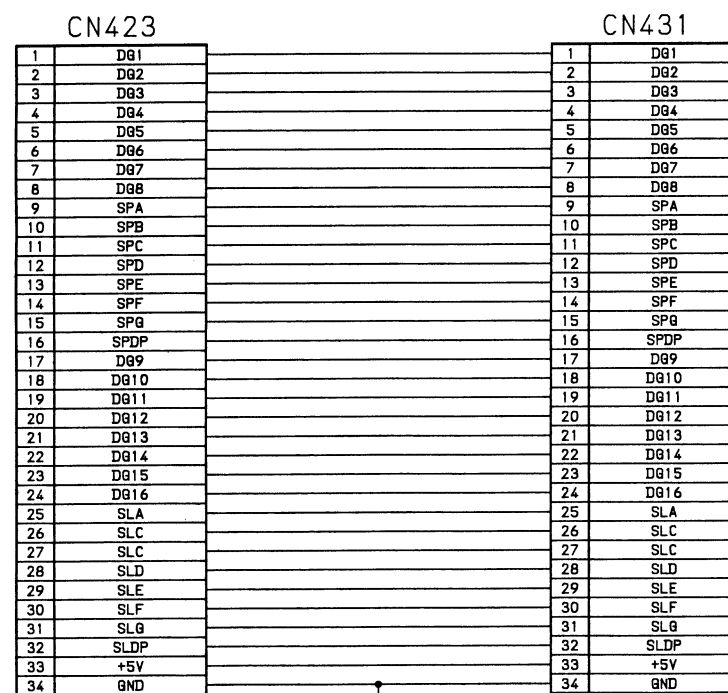
TYPE B
 BOTTOM VIEW



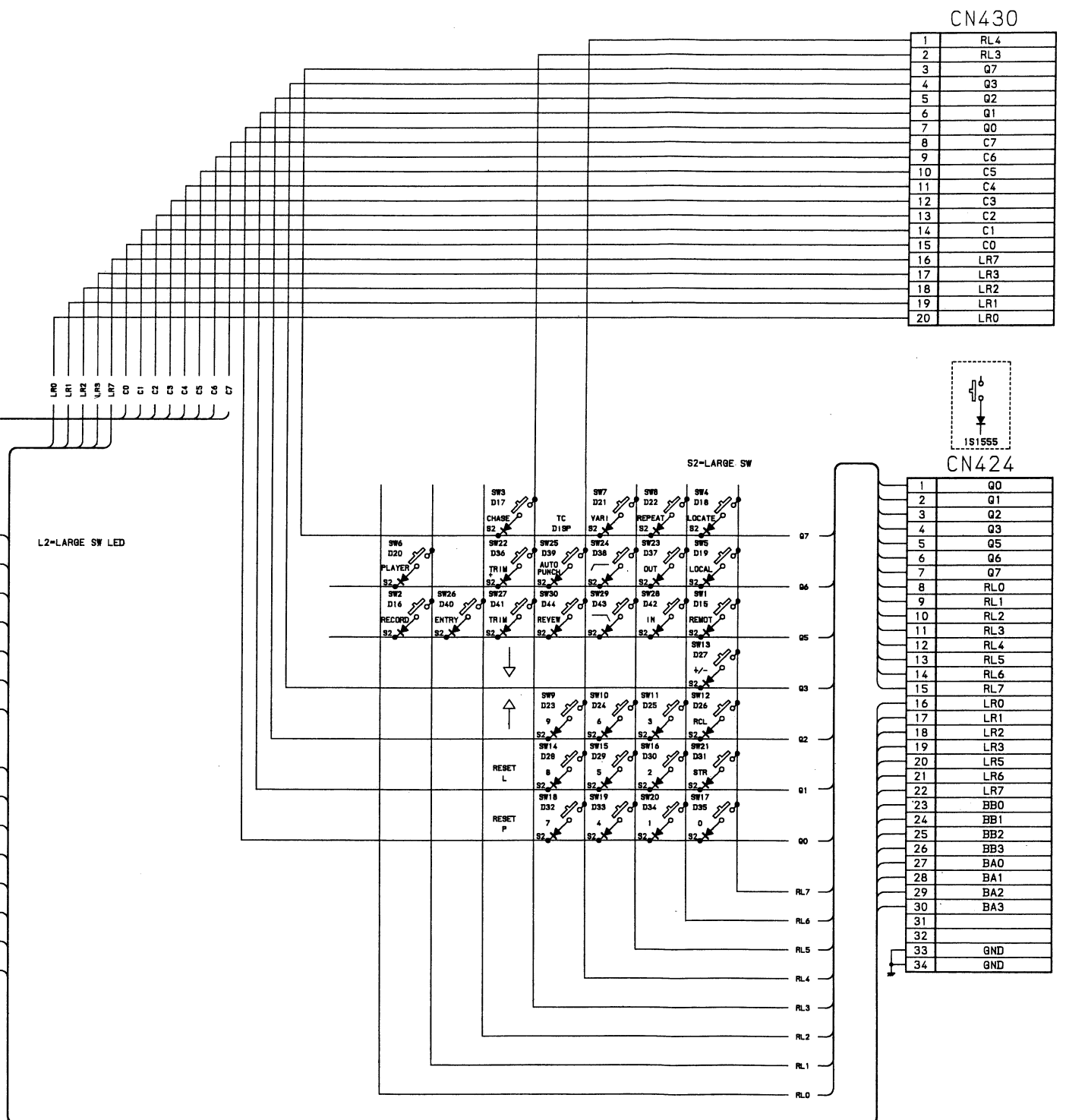
TYPE D
 BOTTOM VIEW

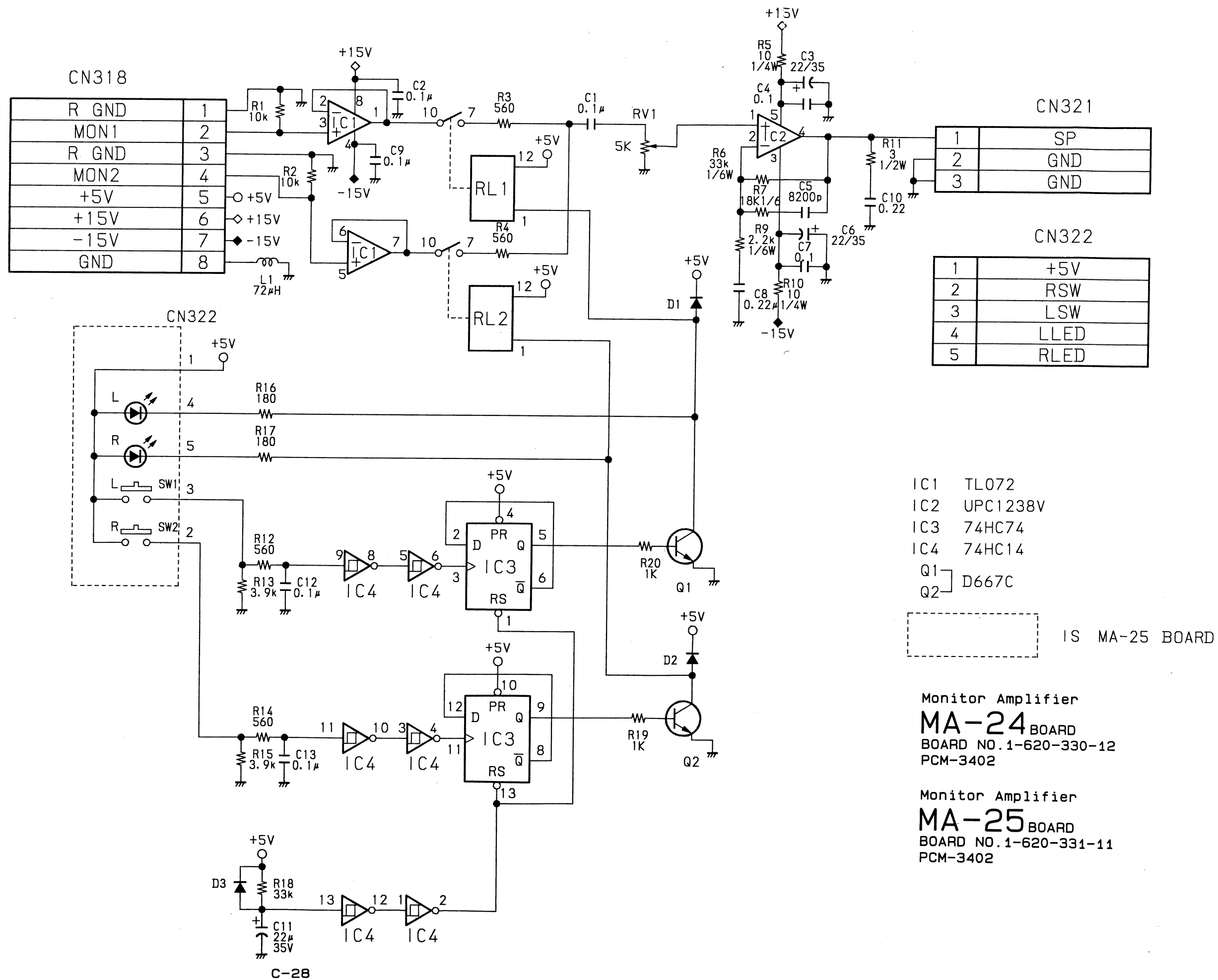


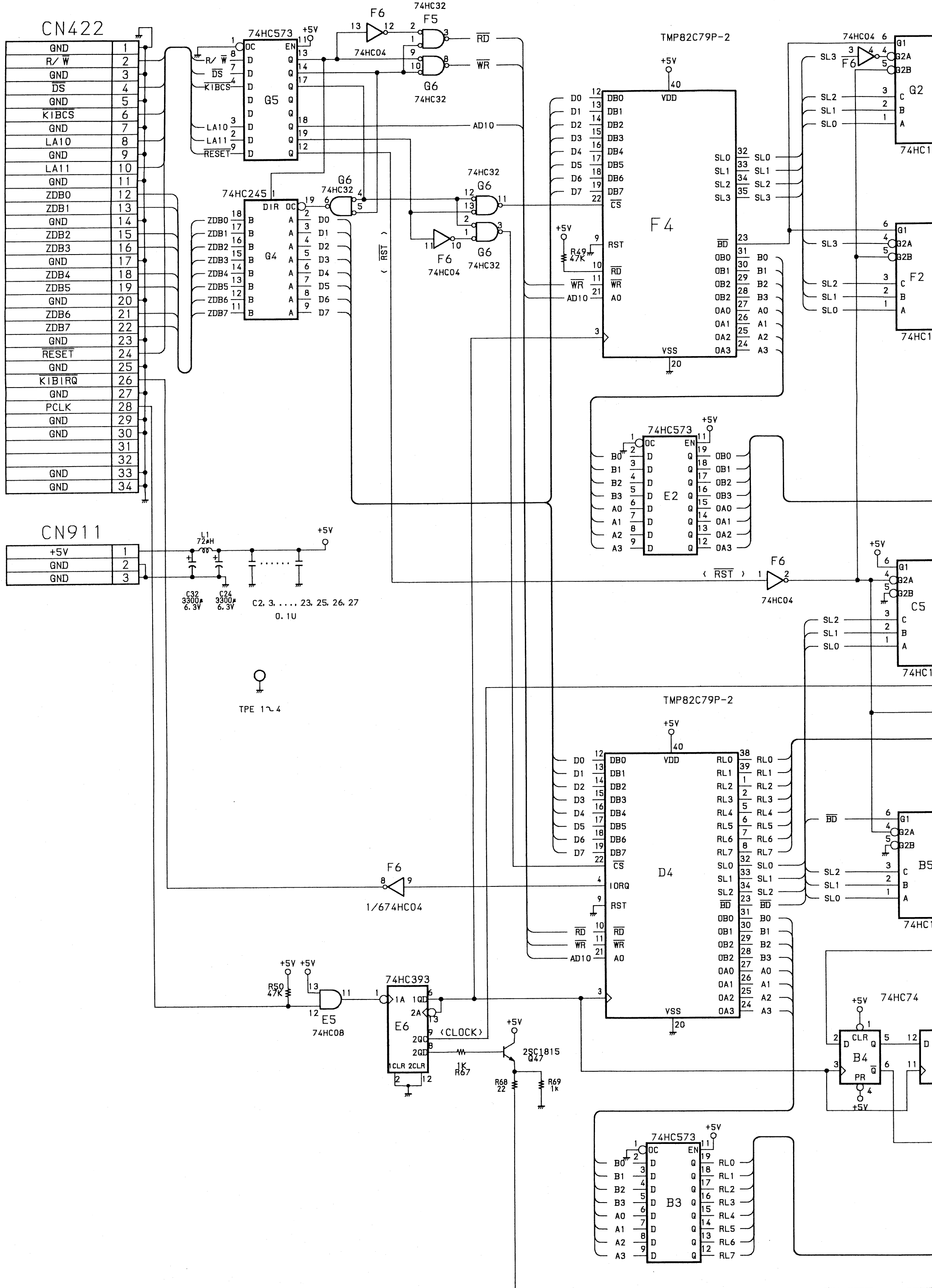
Key Switch
KEY-7 BOARD
 BOARD NO. 1-620-327-12
 PCM-3402

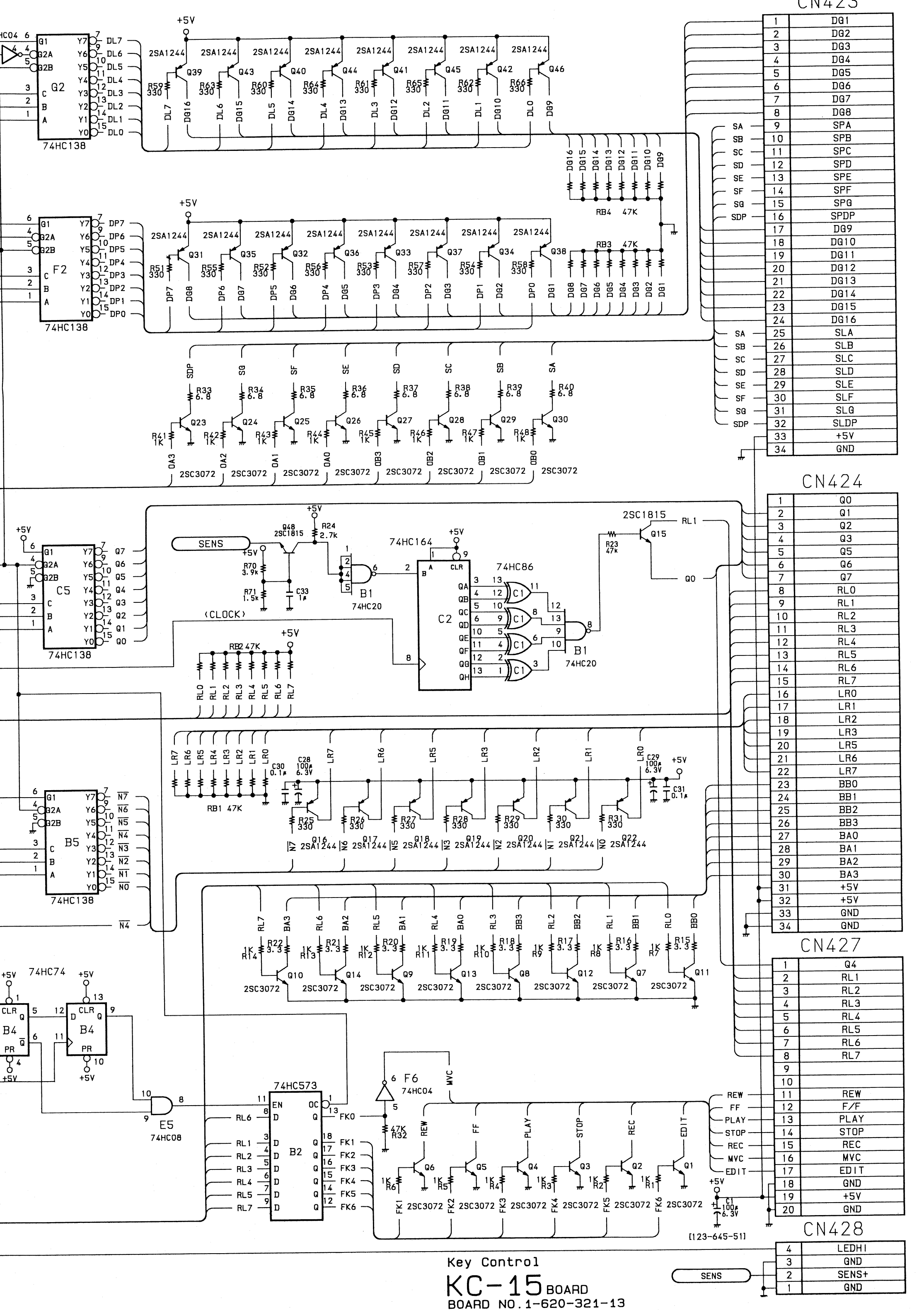


Key Switch
KSW-8 BOARD
 BOARD NO. 1-620-332-12
 PCM-3402









CN423	
1	DG1
2	DG2
3	DG3
4	DG4
5	DG5
6	DG6
7	DG7
8	DG8
9	SPA
10	SPB
11	SPC
12	SPD
13	SPE
14	SPF
15	SPG
16	SPDP
17	DG9
18	DG10
19	DG11
20	DG12
21	DG13
22	DG14
23	DG15
24	DG16
25	SLA
26	SLB
27	SLC
28	SLD
29	SLE
30	SLF
31	SLG
32	SLDP
33	+5V
34	GND

CN424	
1	Q0
2	Q1
3	Q2
4	Q3
5	Q5
6	Q6
7	Q7
8	RL0
9	RL1
10	RL2
11	RL3
12	RL4
13	RL5
14	RL6
15	RL7
16	LR0
17	LR1
18	LR2
19	LR3
20	LR5
21	LR6
22	LR7
23	BB0
24	BB1
25	BB2
26	BB3
27	BA0
28	BA1
29	BA2
30	BA3
31	+5V
32	+5V
33	GND
34	GND

CN427	
1	Q4
2	RL1
3	RL2
4	RL3
5	RL4
6	RL5
7	RL6
8	RL7
9	
10	
11	REW
12	F/F
13	PLAY
14	STOP
15	REC
16	MVC
17	EDIT
18	GND
19	+5V
20	GND

CN428	
4	LEDH1
3	GND
2	SENS+
1	GND

CN908

5	-15V
4	GND
3	+15V
2	+5V
1	GND

TPE1~5

CX7912A Pin No.

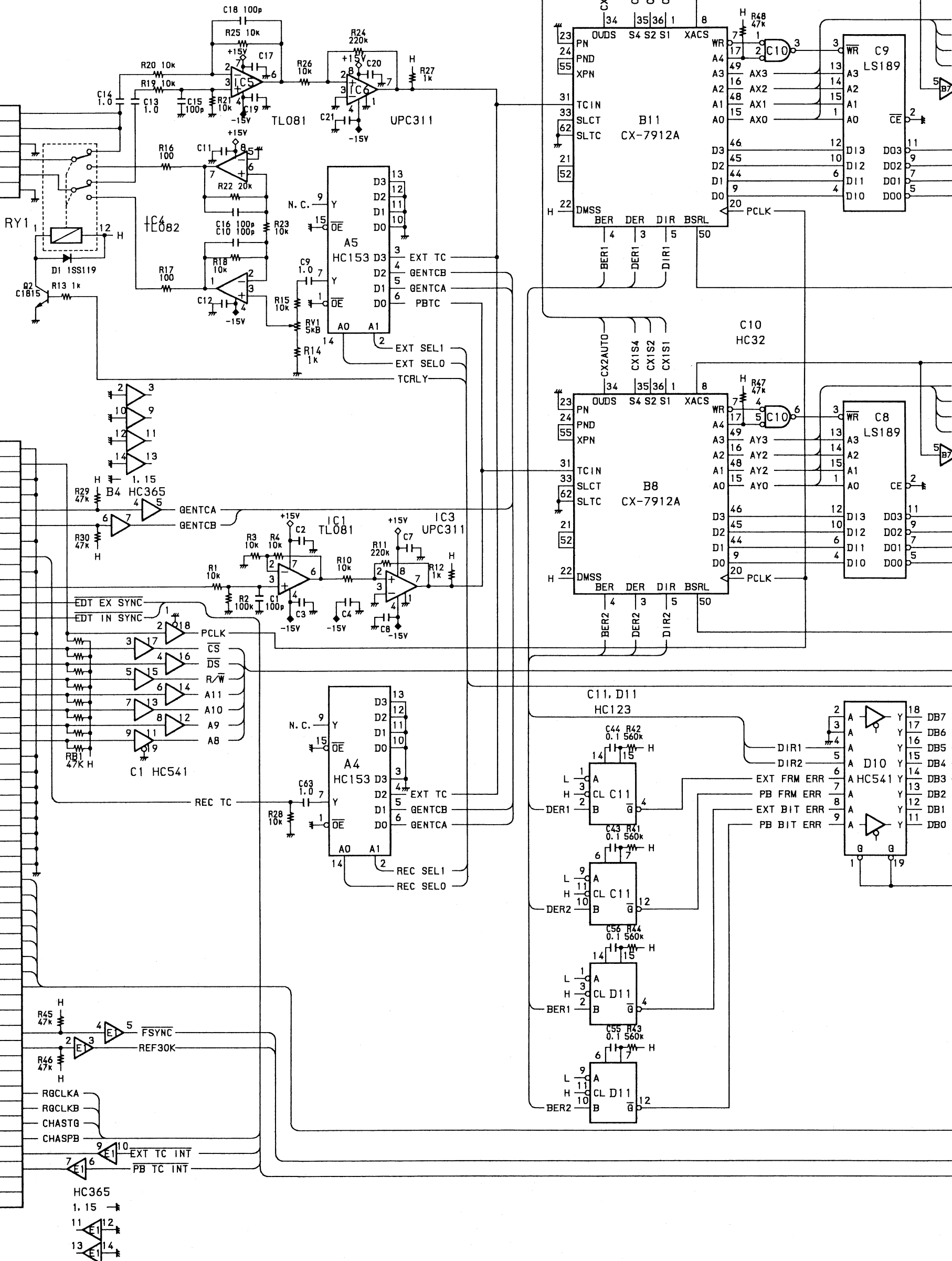
H ---- 47. 61
GND --- 40. 54. 2. 29. 30. 6
37. 38. 39. 63. 64

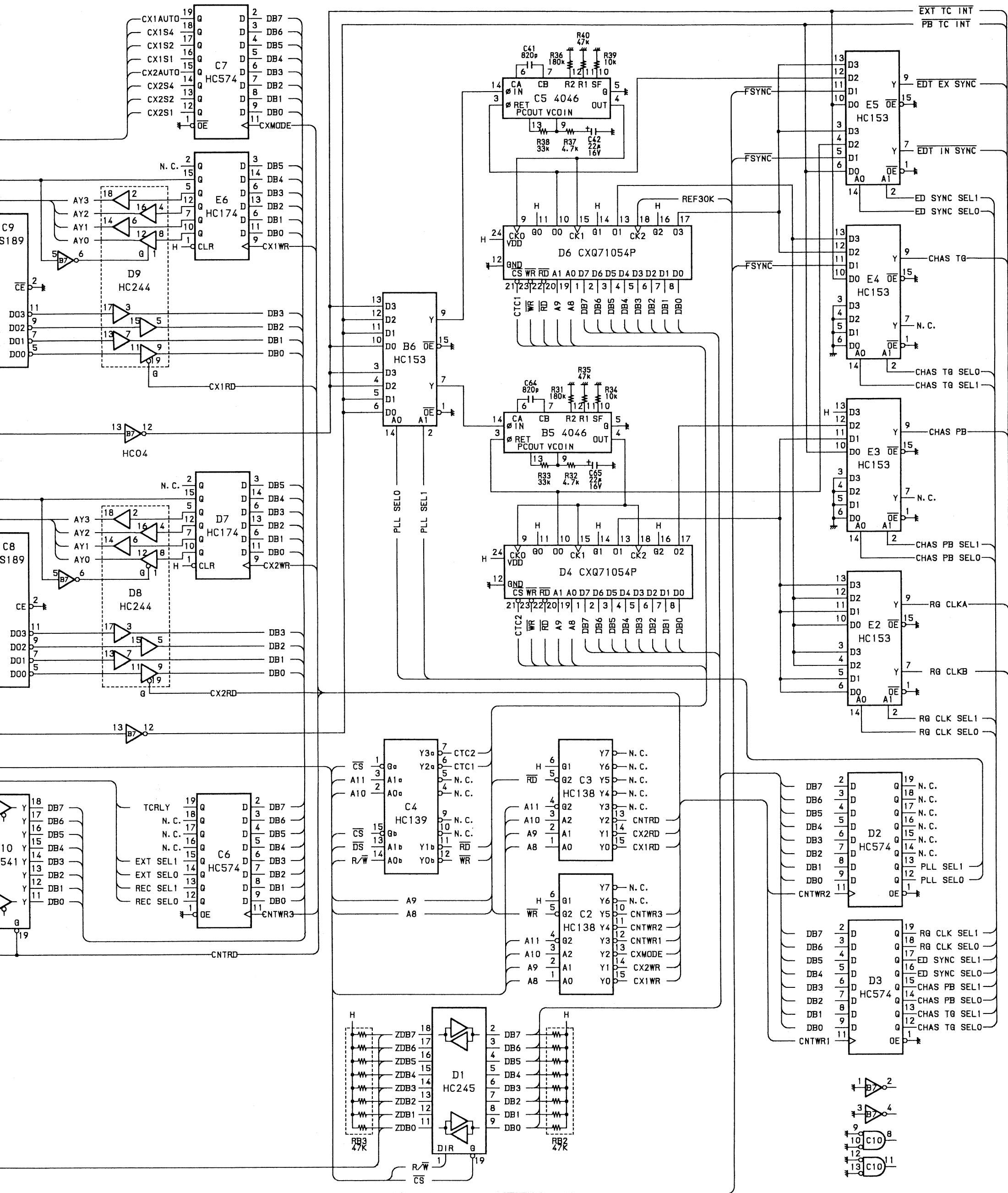
CN451

1	EXT TC IN-
2	EXT TC IN+
3	GND
4	EXT TC OUT-
5	EXT TC OUT+
6	GND

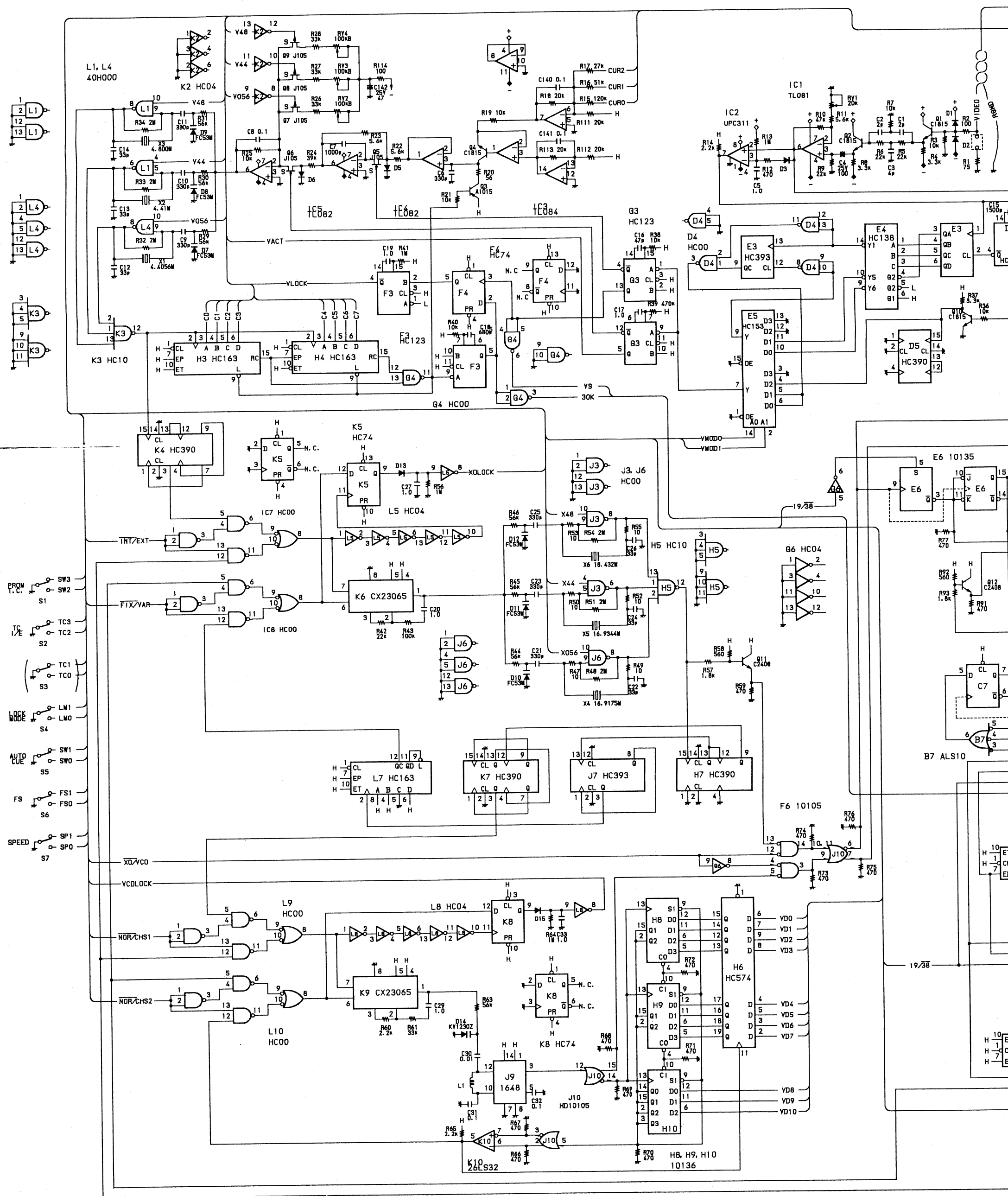
CN452

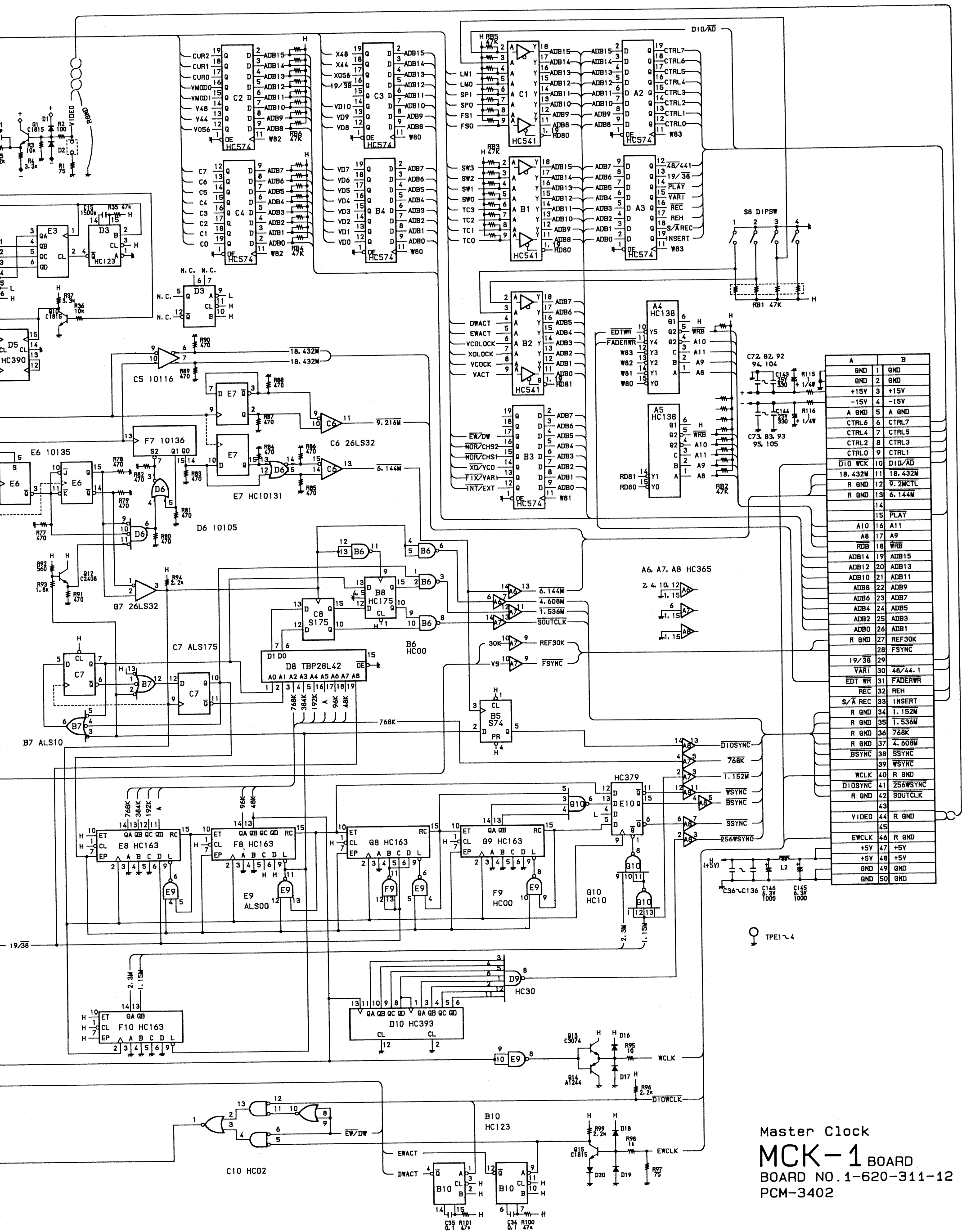
1	GND
2	PCLK
3	GND
4	GND
5	GEN TCA
6	GEN TCB
7	GND
8	REC TC
9	GND
10	PB TC
11	EDT EX S
12	EDT IN S
13	GND
14	TCC CS
15	DS
16	R/W
17	LA11
18	LA10
19	LA9
20	LA8
21	GND
22	GND
23	GND
24	GND
25	GND
26	GND
27	GND
28	GND
29	ZDB7
30	ZDB6
31	ZDB5
32	ZDB4
33	ZDB3
34	ZDB2
35	ZDB1
36	ZDB0
37	GND
38	RESET
39	FSYNC
40	REF30K
41	
42	
43	RGCLKA
44	RGCLKB
45	CHAS TGET
46	CHAS INTNL
47	EXT TC INT
48	PB TC INT
49	
50	





Interface
IF-153 BOARD
 BOARD NO. 1-620-497-13
 PCM-3402





[illegible]

6	5	4	3	2	1
CFG	R GND		CTLPHER+	CTLPHER-	GND

1	A-CUE1 → R GND	2	
3	R GND → A-CUE2	4	
5	A GND	GND	6
7	A-2D → R GND	8	
9	R GND → A-1D	10	
11	A-2B → R GND	12	
13	R GND → A-1B	14	
15	A-2C → R GND	16	
17	R GND → A-1C	18	
19	A-2A → R GND	20	
21	R GND → A-1A	22	
23	A-CTL → R GND	24	
25	R GND → A-TC	26	

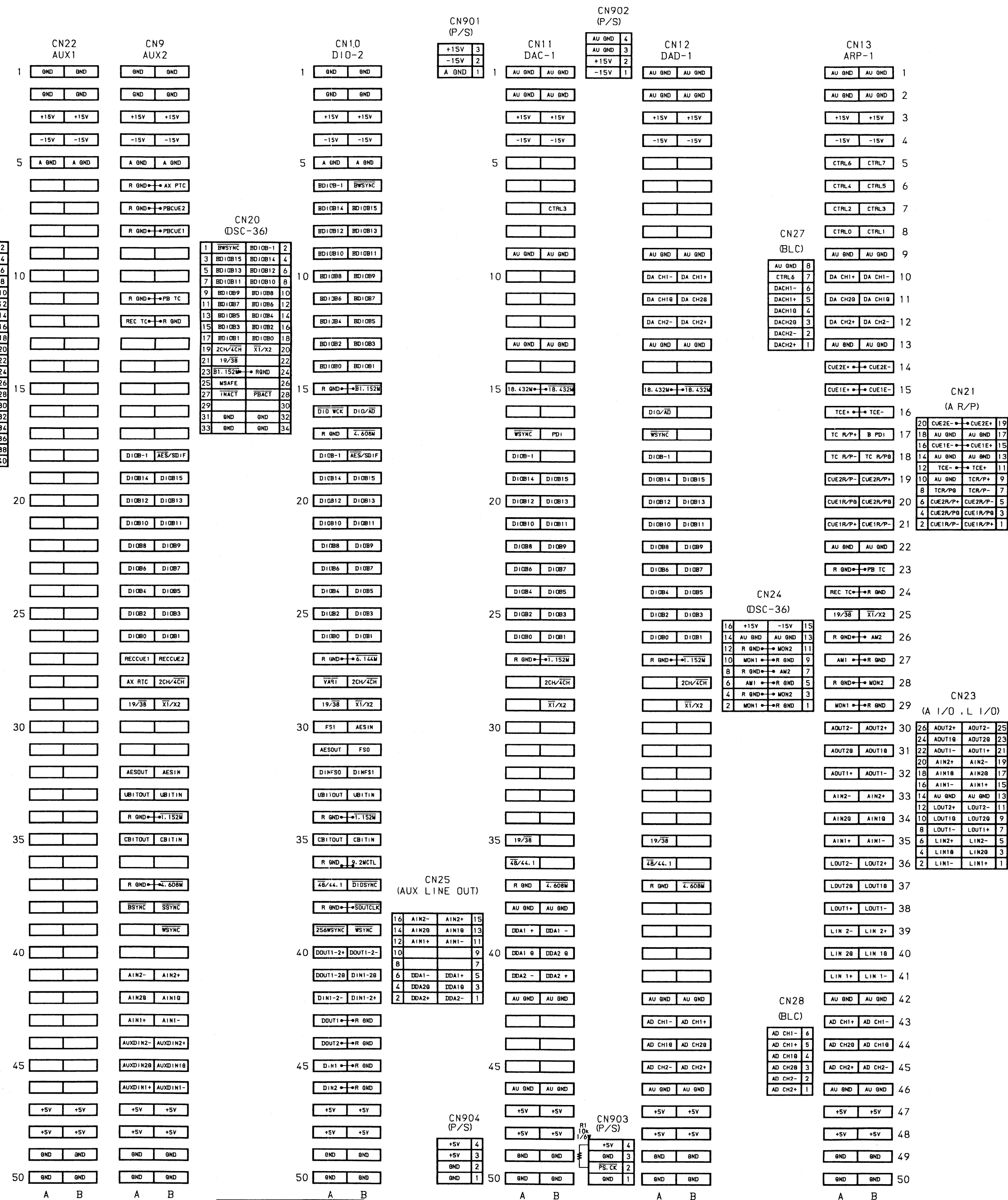
1	S-CUE1	R 8ND	2
3	R 8ND	S-CUE2	4
5	A 8ND	A 8ND	6
7	S-2D	R 8ND	8
9	R 8ND	S-ID	10
11	S-2B	R 8ND	12
13	R 8ND	S-1B	14
15	S-2C	R 8ND	16
17	R 8ND	S-1C	18
19	S-2A	R 8ND	20
21	R 8ND	S-1A	22
23	S-CTL	R 8ND	24
25	R 8ND	S-TC	26

	CN1 REC-1	CN2 SEP-1	CN3 MDM-2	CN4 MDC-1	CN5 ED-16	CN6 ED-17	CN7 CTL-1	CN8 MCK-1
1	GND GND	GND GND	GND GND	GND GND	GND GND	GND GND	GND GND	GND GND
2	GND GND	GND GND	GND GND	GND GND	GND GND	GND GND	GND GND	GND GND
3	+15V +15V		DEBUS14 DEBUS15		DEBUS14 DEBUS15	DEBUS14 DEBUS15	+15V +15V	+15V +15V
4	-15V -15V	R GND → PB OUT1	DEBUS12 DEBUS13		DEBUS12 DEBUS13	DEBUS12 DEBUS13	-15V -15V	-15V -15V
5	A GND A GND	R GND → PB OUT2	DEBUS10 DEBUS11	ERB	DEBUS10 DEBUS11	DEBUS10 DEBUS11	A GND A GND	A GND A GND
6	R GND → A-2D	R GND → PB OUT3	DEBUS 8 DEBUS 9		DEBUS8 DEBUS9	DEBUS8 DEBUS9		CTRL6 CTRL7
7	A-1D → R GND	R GND → PB OUT4	DEBUS 6 DEBUS 7		DEBUS6 DEBUS7	DEBUS6 DEBUS7	CTLPHER- CTLPHER+	CTRL4 CTRL5
8	R GND → A-2B	R GND → PB OUT5	DEBUS 4 DEBUS 5	ERA	DEBUS4 DEBUS5	DEBUS4 DEBUS5	R GND → CF0	CTRL2 CTRL3
9	A-1B → R GND	R GND → PB OUT6	DEBUS 2 DEBUS 3		DEBUS2 DEBUS3	DEBUS2 DEBUS3		CTRL0 CTRL1
10	R GND → A-2C	R GND → PB OUT7	DEBUS 0 DEBUS 1		DEBUS0 DEBUS1	DEBUS0 DEBUS1	R GND → PBCTL	D10 WCK D10/AD
11	A-1C → R GND	R GND → PB OUT8		CORRECT	D10B-1 DEBUS-1	D10B-1 DEBUS-1		18.432M → 18.432M
12	R GND → A-2A	ENOUT2 ENOUT1	ENOUT2 ENOUT1		D10B14 D10B15	D10B14 D10B15	R GND → 9.2MCTL	R GND → 9.2MCTL
13	A-1A → R GND	ENOUT4 ENOUT3	ENOUT4 ENOUT3		D10B12 D10B13	D10B12 D10B13		R GND → 6.144M
14	R GND → A-CTL	ENOUT6 ENOUT5	ENOUT6 ENOUT5	DEC U/D	D10B10 D10B11	D10B10 D10B11		
15	R GND → S-2D	ENOUT8 ENOUT7	ENOUT8 ENOUT7	CORCT+ CORCT-	D10B8 D10B9	D10B8 D10B9	SPREF PLAY	
16	S-1D → R GND	SEP014 SEP015	SEP014 SEP015	PERD+ PERD-	D10B6 D10B7	D10B6 D10B7	A10 A11	A10 A11
17	R GND → S-2B	SEP012 SEP013	SEP012 SEP013	PERD	D10B4 D10B5	D10B4 D10B5	A8 A9	A8 A9
18	S-1B → R GND	SEP010 SEP011	SEP010 SEP011	ERA+ ERA-	D10B2 D10B3	D10B2 D10B3	RDB WRB	RDB WRB
19	R GND → S-2C	SEP08 SEP09	SEP0 8 SEP0 9	ERB+ ERB-	D10B0 D10B1	D10B0 D10B1	ADB14 AES/SDIF	ADB14 ADB15
20	S-1C → R GND	SEP06 SEP07	SEP0 6 SEP0 7	PCD	ADB12 ADB13	ADB14 ADB15	ADB12 ADB13	ADB12 ADB13
21	R GND → S-2A	SEP04 SEP05	SEP0 4 SEP0 5	DEC U/D+ DEC U/D-	ADB10 ADB11	ADB12 ADB13	ADB10 ADB11	ADB10 ADB11
22	S-1A → R GND	SEP02 SEP03	SEP0 2 SEP0 3	19/38 2CH/4CH	ADB8 ADB9	ADB10 ADB11	ADB8 ADB9	ADB8 ADB9
23	R GND → S-CTL	SEP00 SEP01	SEP0 0 SEP0 1	MREQ	ADB6 ADB7	ADB8 ADB9	ADB6 ADB7	ADB6 ADB7
24	ENOUT2 ENOUT1		CORRECT CRC	READ CK	ADB4 ADB5	ADB6 ADB7	ADB4 ADB5	ADB4 ADB5
25	ENOUT4 ENOUT3		PERD PCD	SMUTE CTLJP	ADB2 ADB3	ADB4 ADB5	ADB2 ADB3	ADB2 ADB3
26	ENOUT6 ENOUT5	XADRS1 XADRS0	MDMC18 MDMC19	MDMC18 MDMC19	ADB0 ADB1	ADB2 ADB3	ADB0 ADB1	ADB0 ADB1
27	ENOUT8 ENOUT7	GND XADRS2	MDMC16 MDMC17	MDMC16 MDMC17	ERA ERB	ADB0 ADB1		REF30K
28	RECCUE1 RECCUE2		MDMC14 MDMC15	MDMC14 MDMC15	READCK	A10 A11		FSYNC
29	AX RTC 19/38		MDMC12 MDMC13	MDMC12 MDMC13	SMUTE DEC U/D	A8 A9	MSAFE	19/38
30	MSAFE 2CH/4CH	BPH0 BPH1	MDMC10 MDMC11	MDMC10 MDMC11	EMP0	WRB RDB	FS1	VARI 48/44.1
31	R GND → A-CUE1		MDMC8 MDMC9	MDMC8 MDMC9	XADRS1 XADRS2	EDT IN S EDT EX S	FS0	EDT WR FADERWR
32	A-CUE2 → R GND		MDMC6 MDMC7	MDMC6 MDMC7			DINFS0 DINFS1	REC REH
33	A-TC → R GND		MDMC4 MDMC5	MDMC4 MDMC5	EDT WR FADERWR	EDT WR	S/A REC X1/X2	S/A REC INSERT
34	R GND → S-CUE1		MDMC2 MDMC3	MDMC2 MDMC3	19/38 2CH/4CH	19/38 2CH/4CH	19/38 2CH/4CH	R GND → 1.152M
35	S-CUE2 → R GND		MDMC0 MDMC1	MDMC0 MDMC1				R GND → 1.536M
36	S-TC → R GND		MDCON6 MDCON7	MDCON6 MDCON7				R GND → 768K
37	REC ON CTRL2		MDCON4 MDCON5	MDCON4 MDCON5	REC ON PB/TR			R GND → 4.608M
38	CTRL1 CTRL0		MDCON2 MDCON3	MDCON2 MDCON3	PBACT INACT		BPH0 BPH1	BSYNC SSYNC
39		RECCTL	MDCON0 MDCON1	MDCON0 MDCON1	REC REH	REC REH		WSYNC
40		S/A REC	MLEV1 MLEV2	MLEV1 MLEV2	INSERT S/A REC	INSERT S/A REC	RECBA1 RECBA2	WCLK → R GND
41	CTLRECON		19/38 MLEV0	EDT2ACT MLEV0	CTLRECON CUTINSEQ		CTLRECON CUTINSEQ	D10SYNC 256WSYNC
42		CRC+ CRC-	D10E MREQ	A-MAIN+ A-MAIN-	D10E EDT2ACT		R GND → 1.536M	R GND → SOUTCLK
43			PLAY	RECB1 RECB2	BSYNC+ BSYNC-	R GND → 1.152M		
44	R GND → 768KHZ	R GND → 768KHZ	R GND → 1.152M	1.536M				

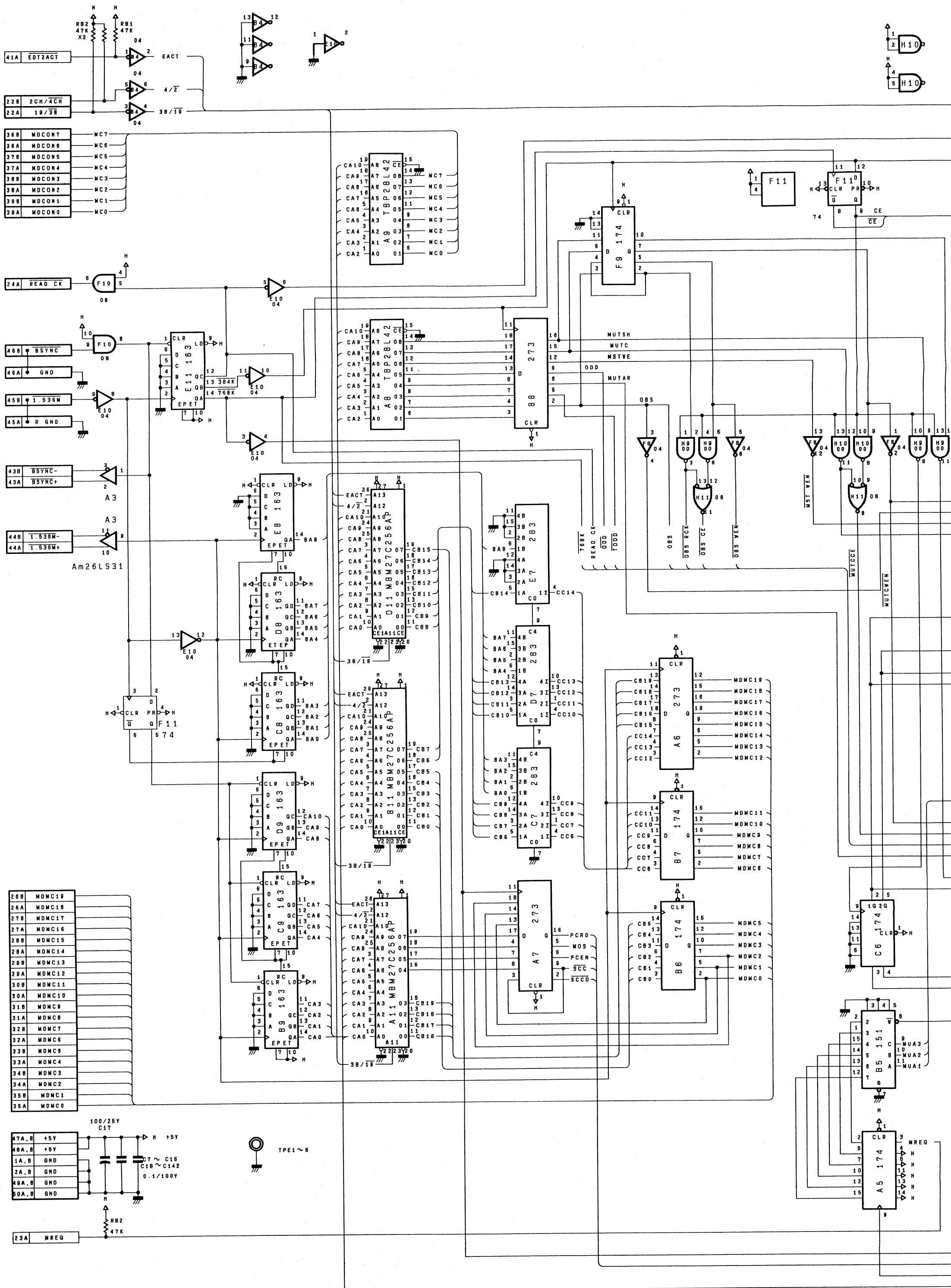
A	D				B							
25	23	21	19	17	15	13	11	9	7	5	3	1
		PLAY	CRIC	A-HAIR	1.536H	15V	000	DECL	END	EM- FEND	CONC	
			CRIC	A-HAIR	1.536H	15V	000	DECL	END	EM- FEND	CONC	
26	24	22	20	18	16	14	12	10	8	6	4	2

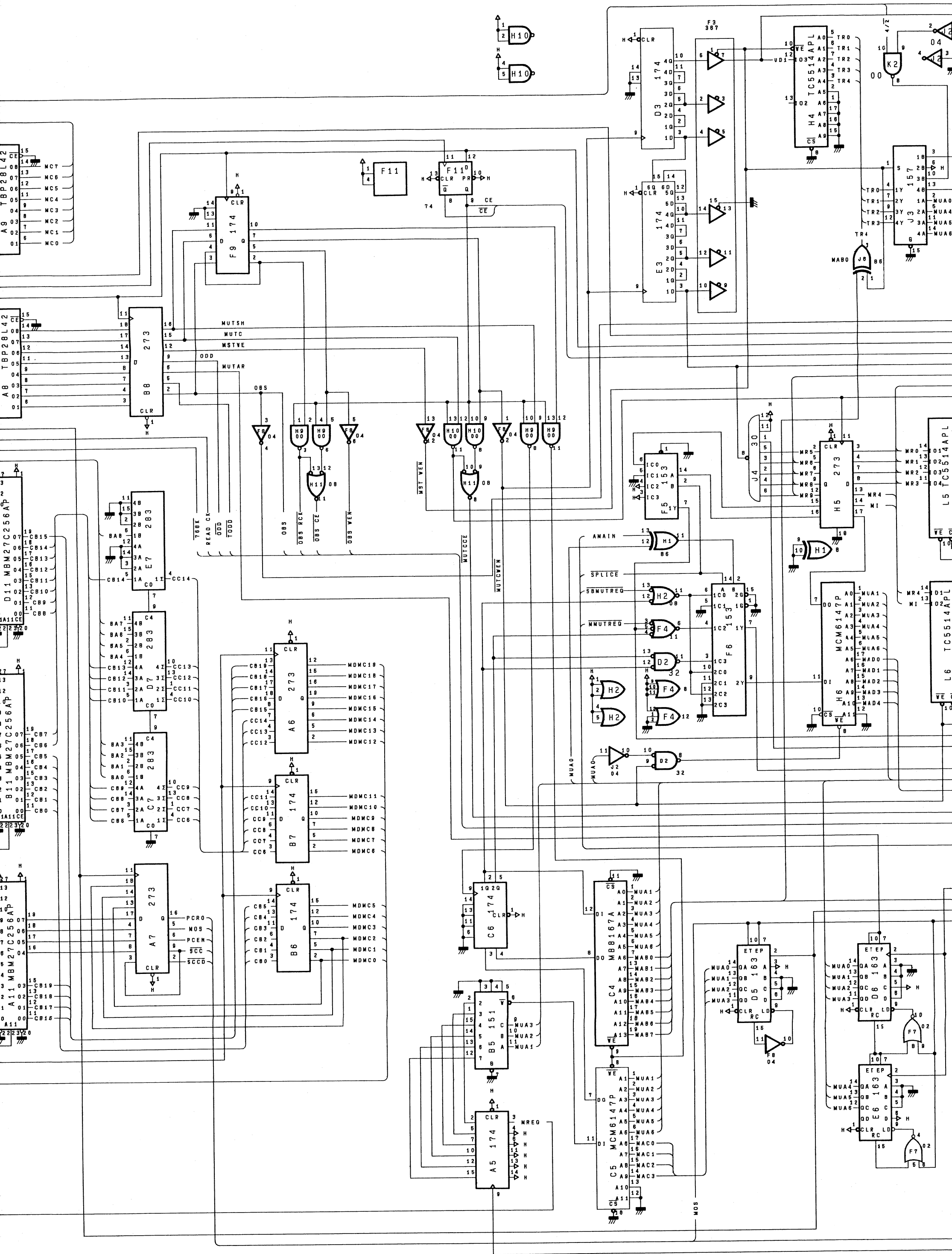
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3	R GND	FB TC	4
5	EDT IN S	EDT EX S	6
7	R GND	FOB	8
9	R GND	WFB	10
11	A11	A10	12
13	A9	A8	14
15	ADB15	ADB14	16
17	ADB13	ADB12	18
19	ADB11	ADB10	20
21	ADB9	ADB8	22
23	ADB7	ADB6	24
25	ADB5	ADB4	26
27	ADB3	ADB2	28
29	ADB1	ADB0	30
31	GND	B PD1	32
33	FSYNC	REF30K	34
35	GND	SP REF	36
37	GND	GND	38
39	GND	GND	40

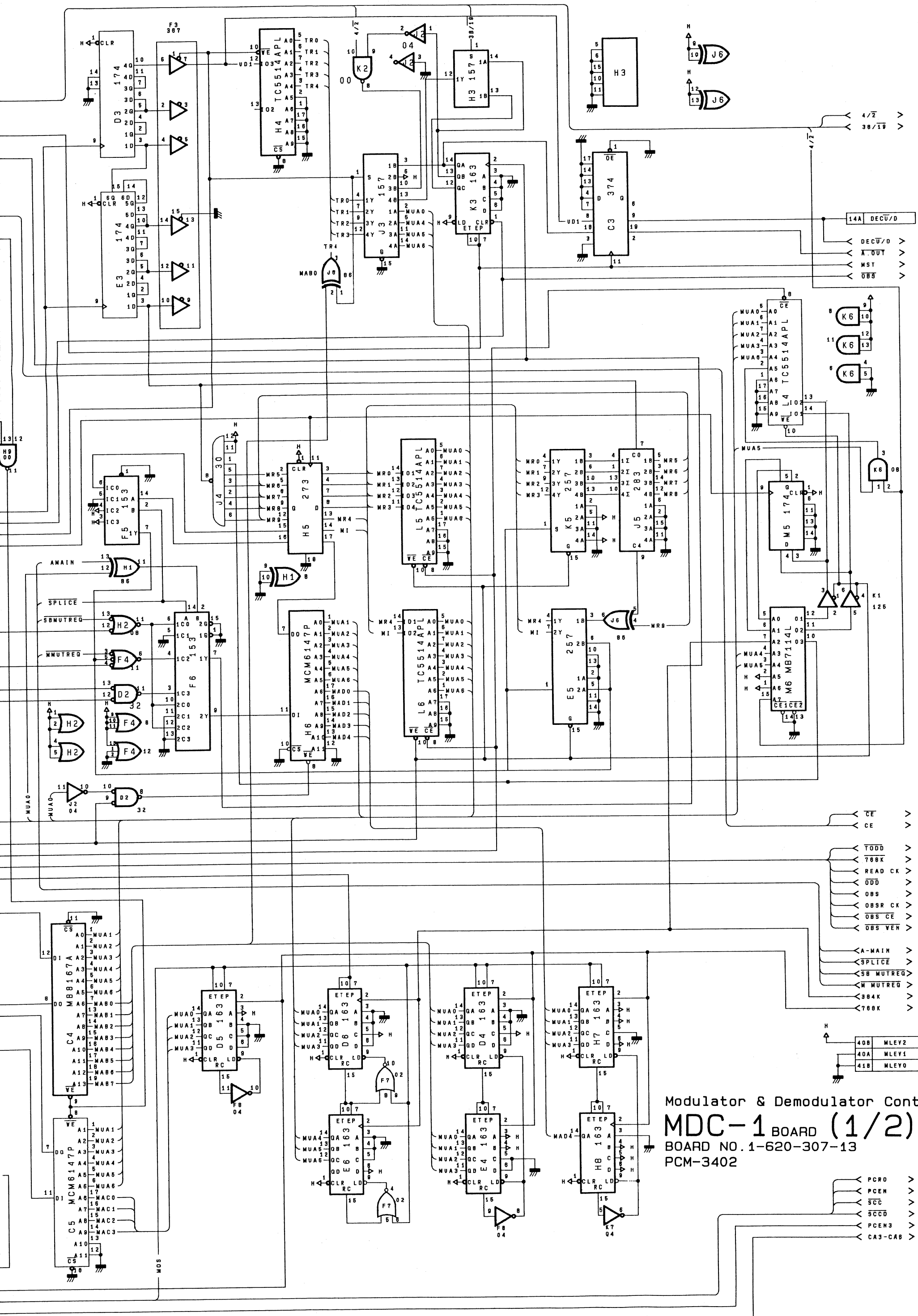
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1	GND	
	GND	
	+15V	
	-15V	
5	A GND	
10		
15		
20		
25		
30		
35		
40		
45		
	+5V	
	+5V	
	GND	
50	GND	
		A



Mother Board
MB-143 BOARD
BOARD NO. 1-620-315-12
PCM-3402





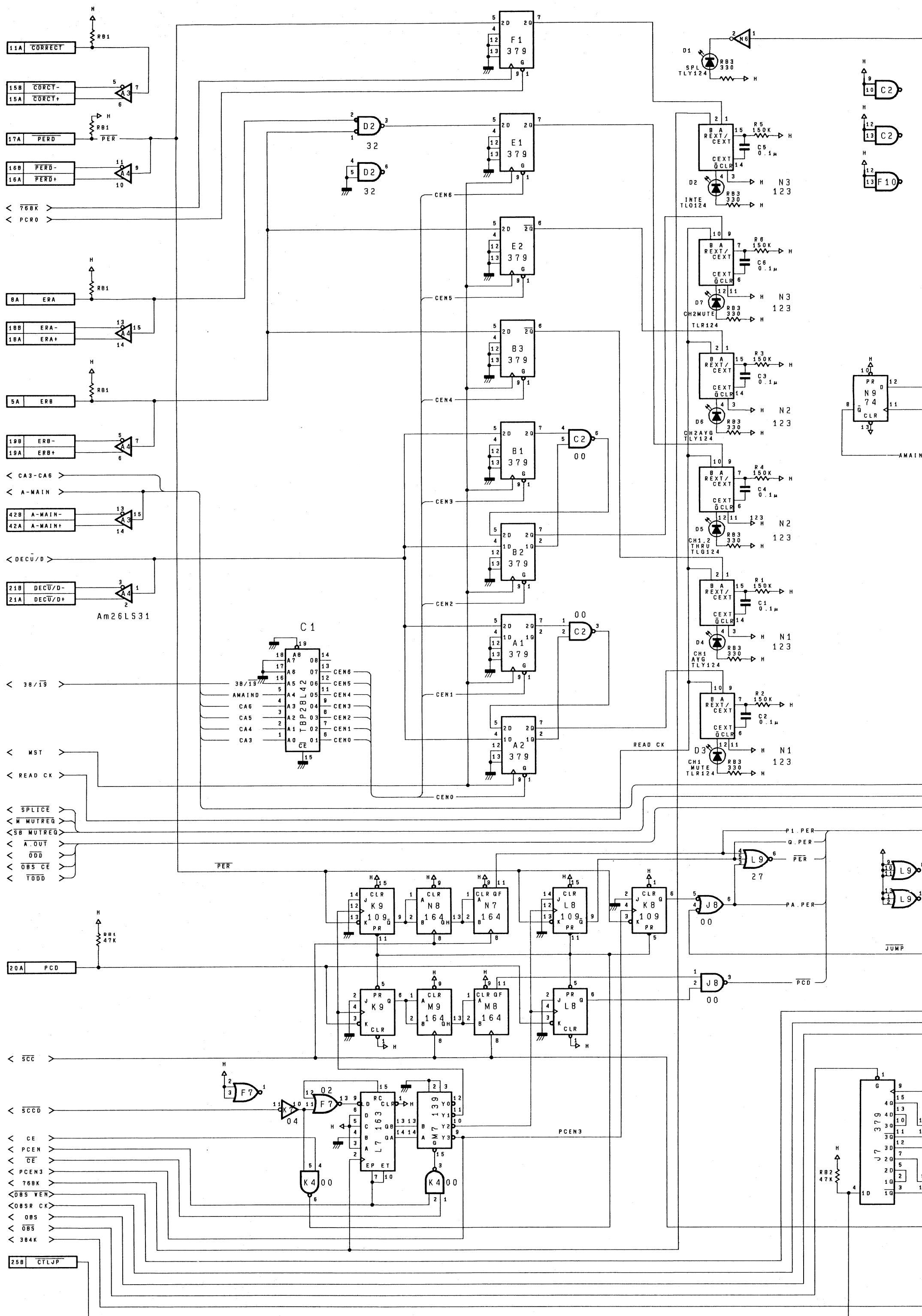


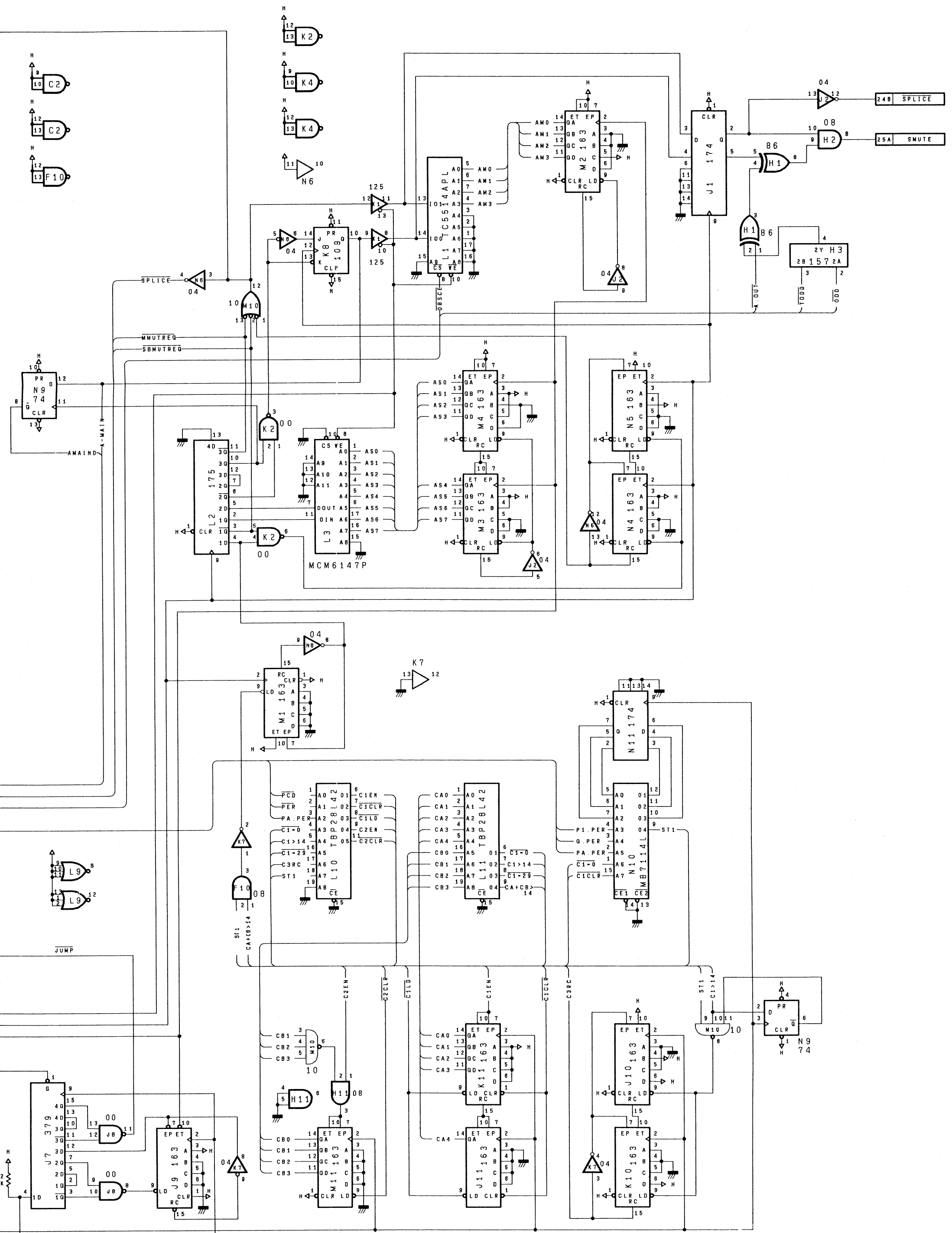
Modulator & Demodulator Controller
MDC-1 BOARD (1/2)
 BOARD NO. 1-620-307-13
 PCM-3402

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 < PCEN3 >
 < CA3-CA8 >

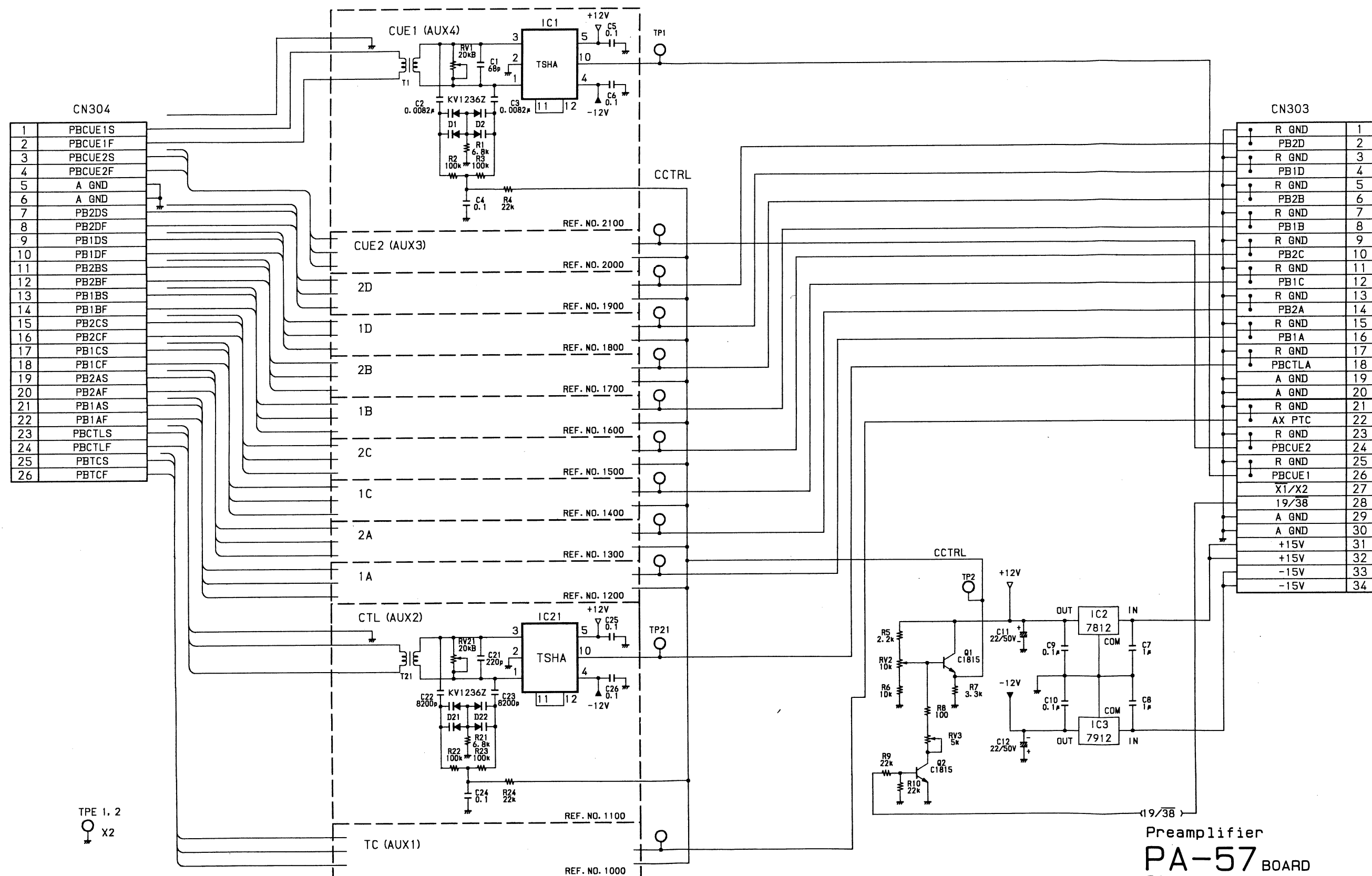
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 < TODD >
 < 788K >
 < READ CK >
 < ODD >
 < OBS >
 < OBSR CK >
 < OBS CE >
 < OBS VEN >
 < A-MAIN >
 < SPLICE >
 < SB MUTREQ >
 < M MUTREQ >
 < 384K >
 < 788K >

40B MLEV2
 40A MLEV1
 41B MLEV0





Modulator & Demodulator Controller
MDC-1 BOARD (2/2)
 BOARD NO.1-620-307-13
 PCM-3402

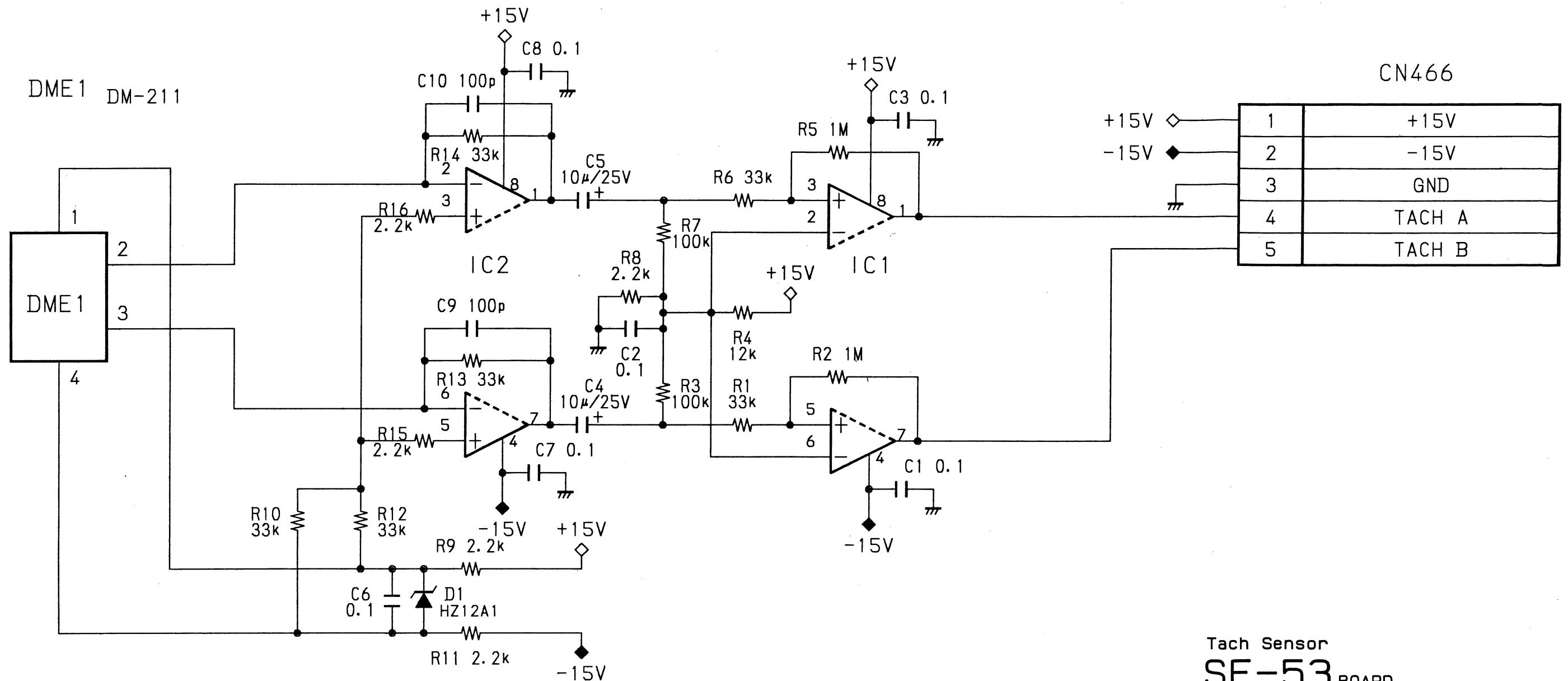


1	PBCUE1S
2	PBCUE1F
3	PBCUE2S
4	PBCUE2F
5	A GND
6	A GND
7	PB2DS
8	PB2DF
9	PB1DS
10	PB1DF
11	PB2BS
12	PB2BF
13	PB1BS
14	PB1BF
15	PB2CS
16	PB2CF
17	PB1CS
18	PB1CF
19	PB2AS
20	PB2AF
21	PB1AS
22	PB1AF
23	PBCTLS
24	PBCTLF
25	PBTCS
26	PBTCF

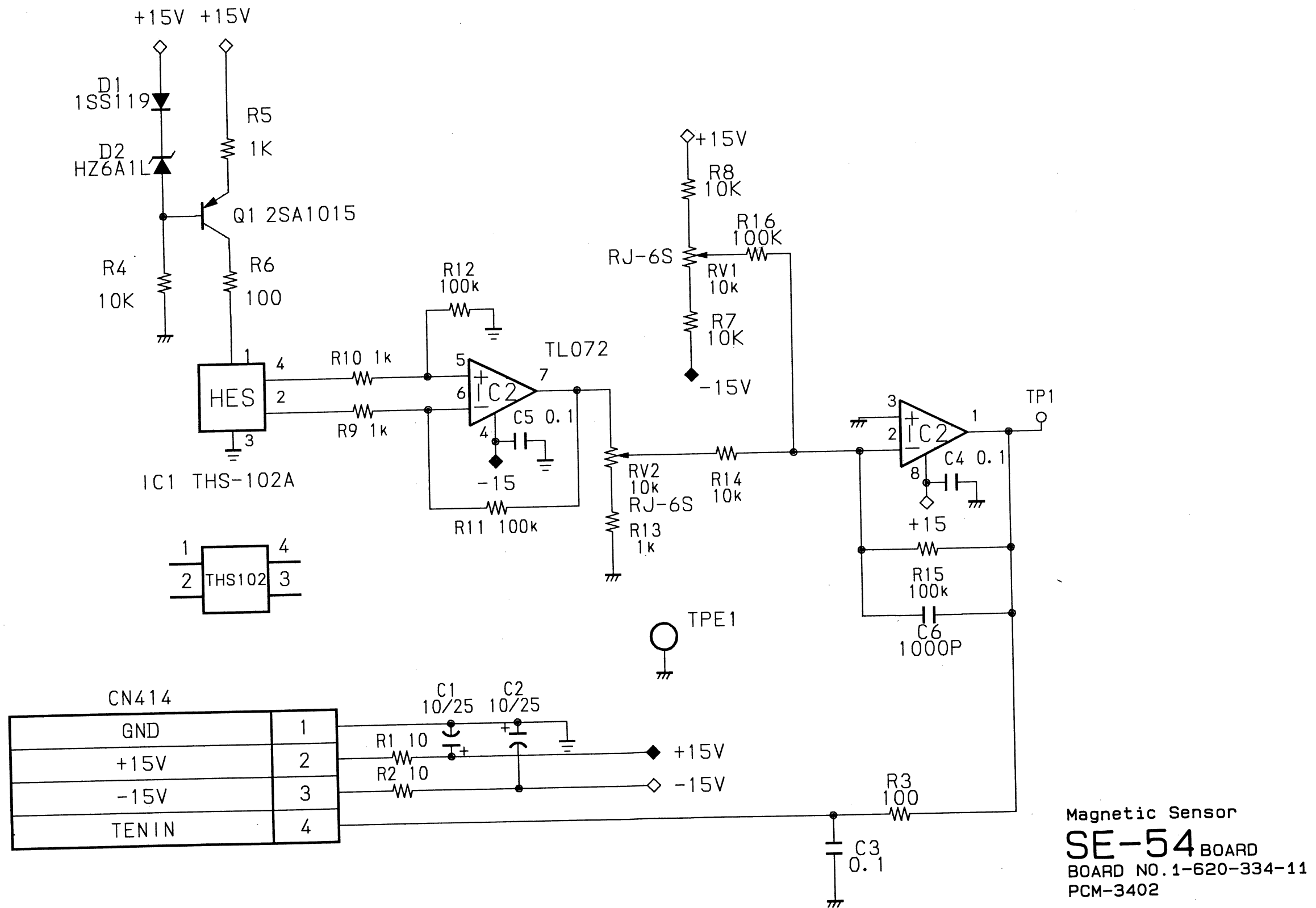
1	R GND
2	PB2D
3	R GND
4	PB1D
5	R GND
6	PB2B
7	R GND
8	PB1B
9	R GND
10	PB2C
11	R GND
12	PB1C
13	R GND
14	PB2A
15	R GND
16	PB1A
17	R GND
18	PBCTLA
19	A GND
20	A GND
21	R GND
22	AX PTC
23	R GND
24	PBCUE2
25	R GND
26	PBCUE1
27	X1/X2
28	19/38
29	A GND
30	A GND
31	+15V
32	+15V
33	-15V
34	-15V

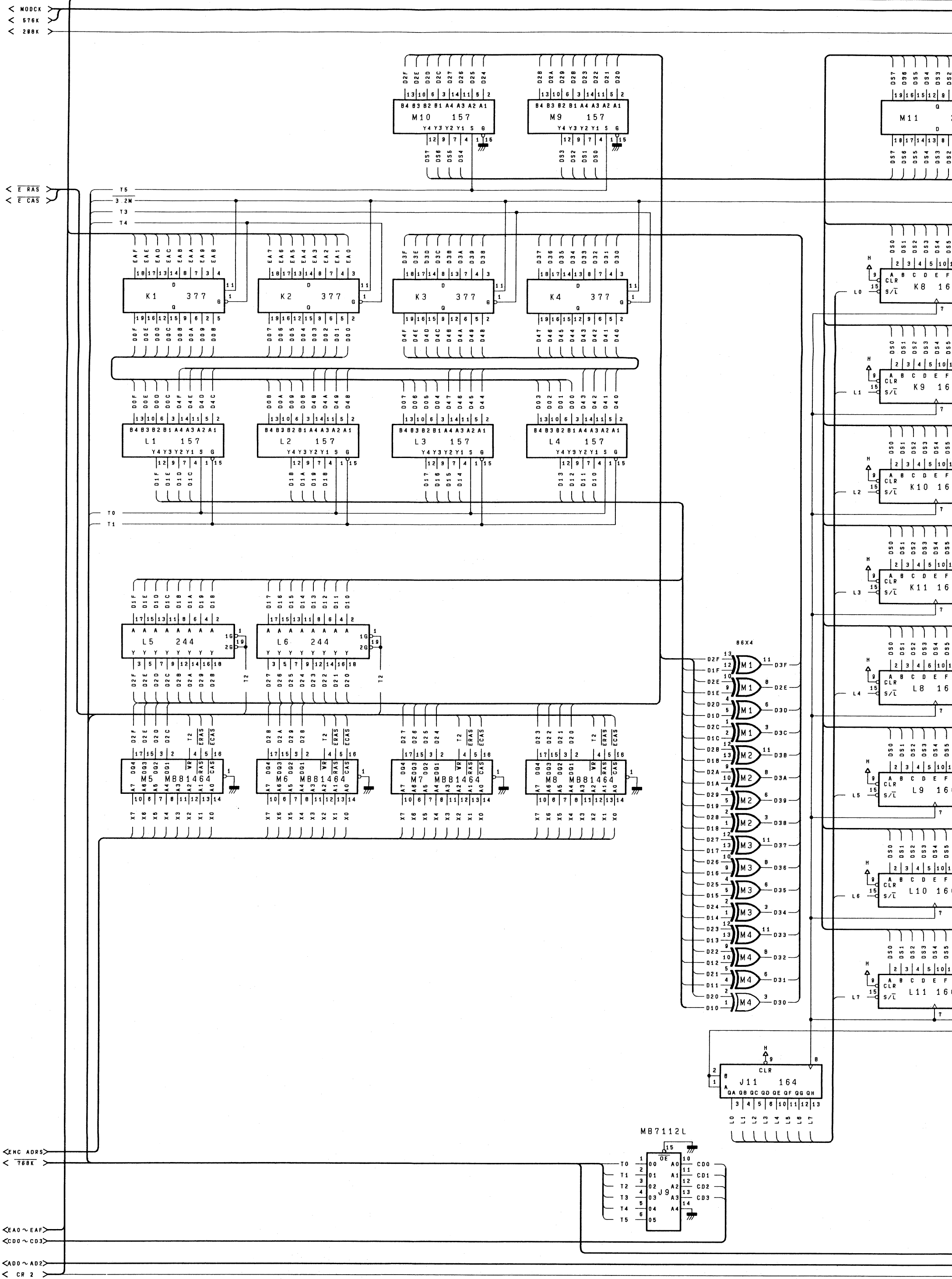
TL082

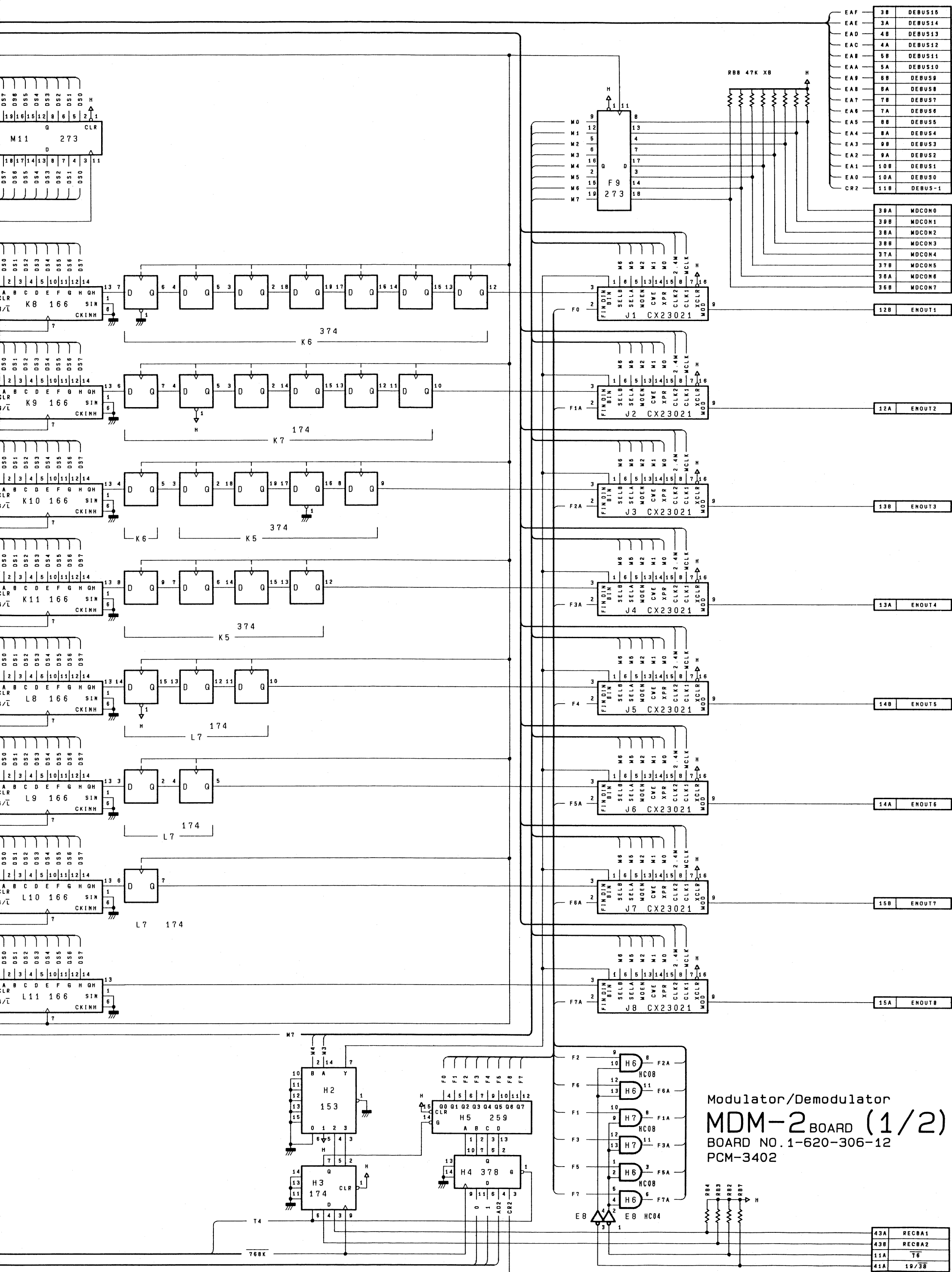
UPC393

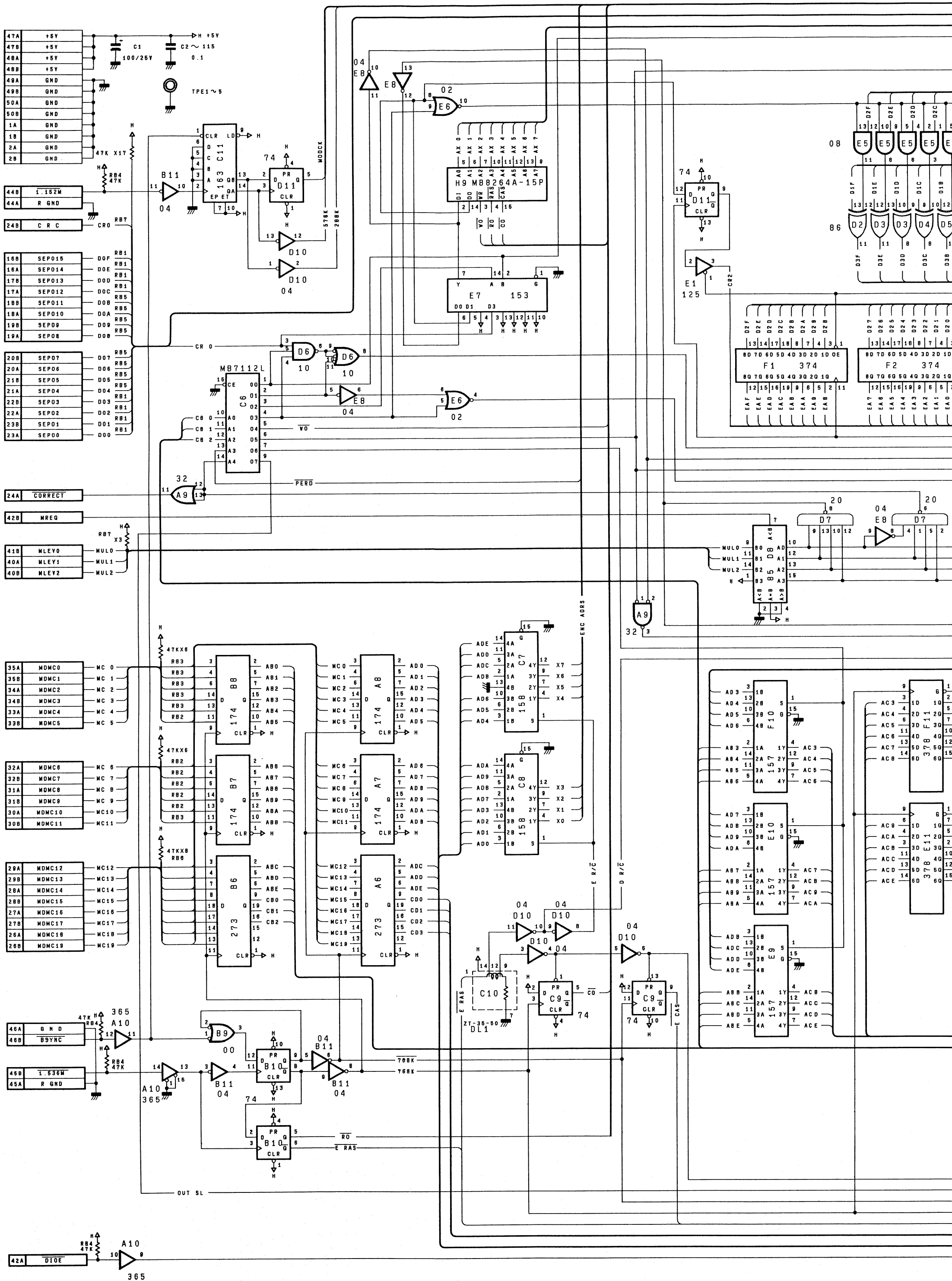


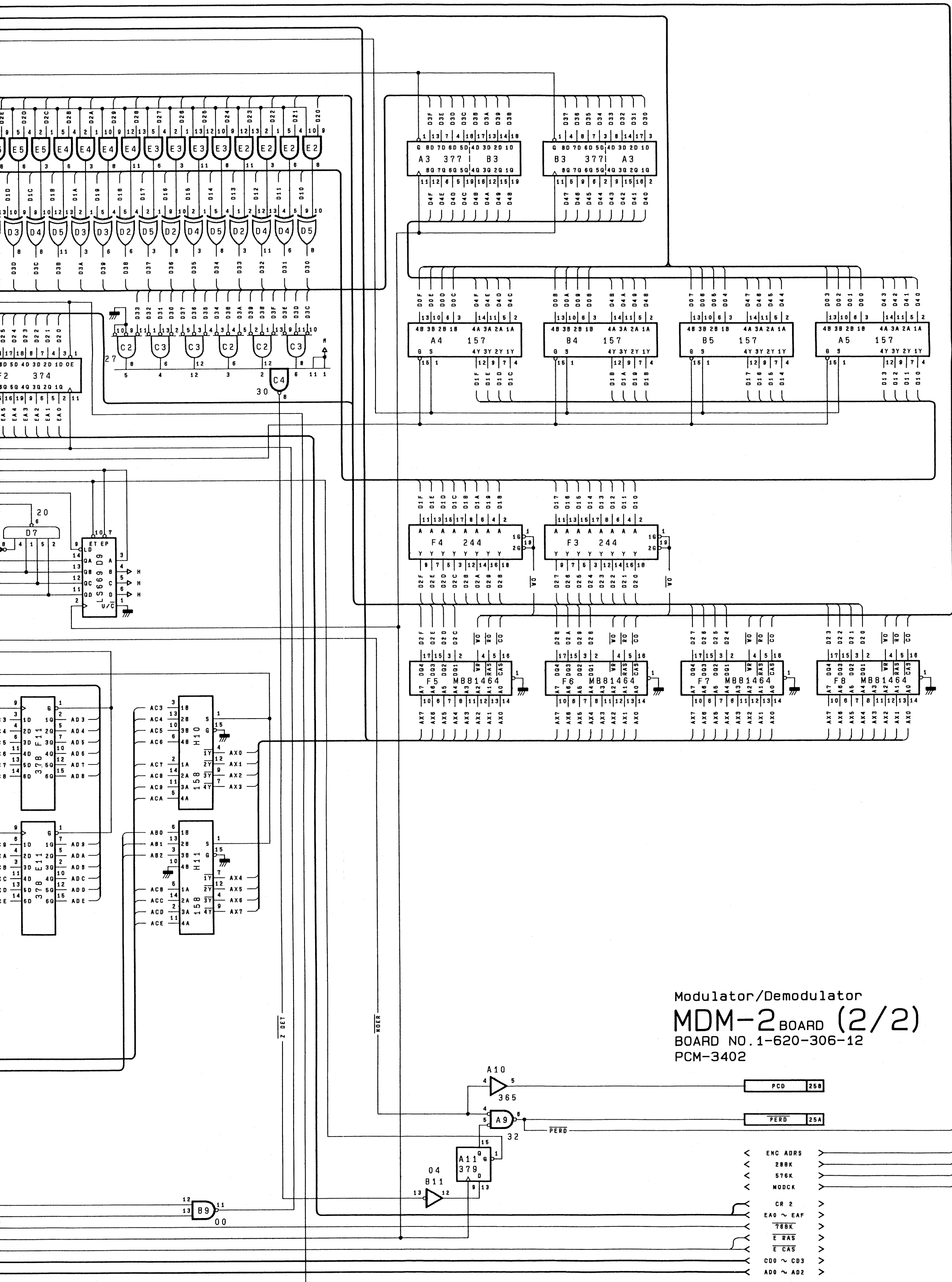
Tach Sensor
SE-53 BOARD
 BOARD NO. 1-620-329-12
 PCM-3402

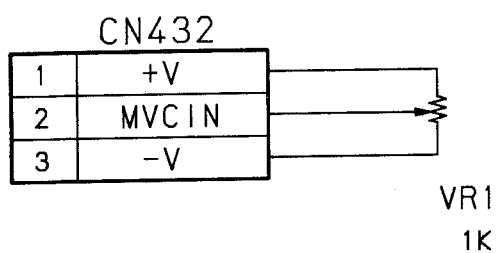










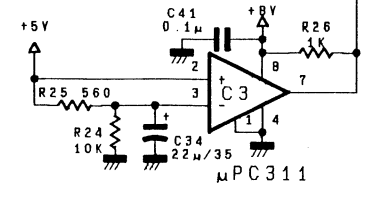
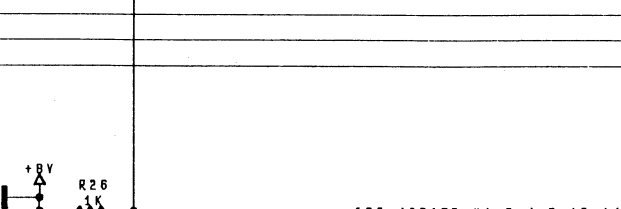
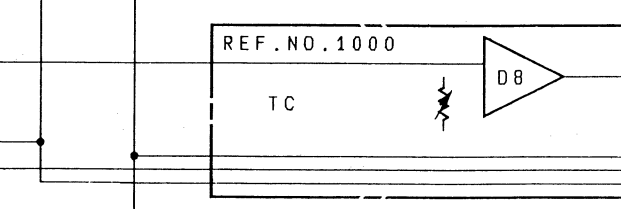
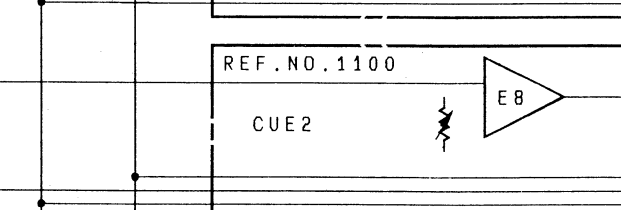
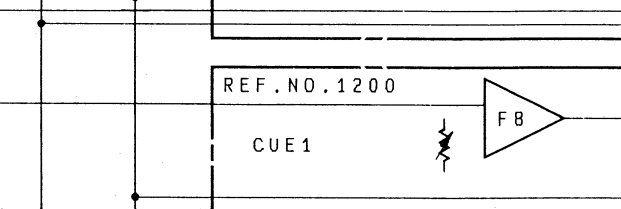
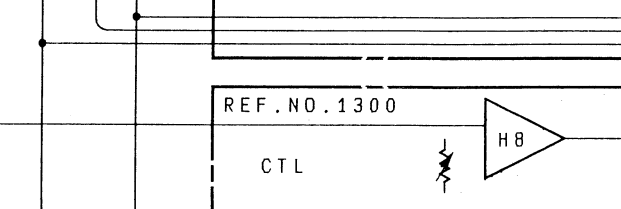
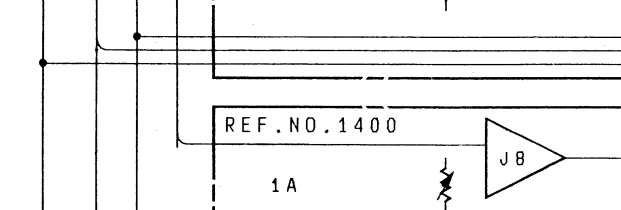
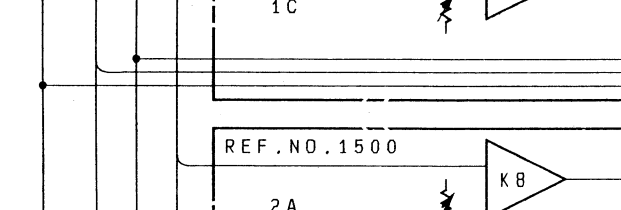
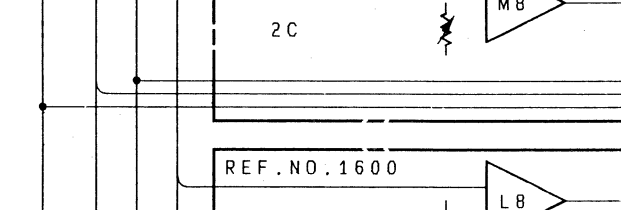
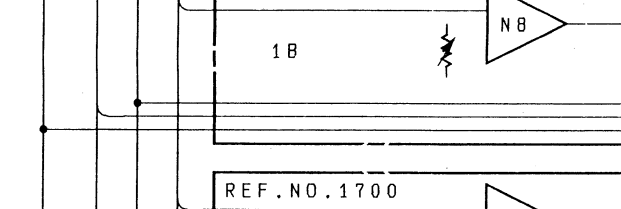
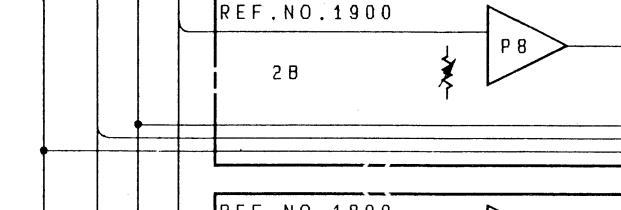
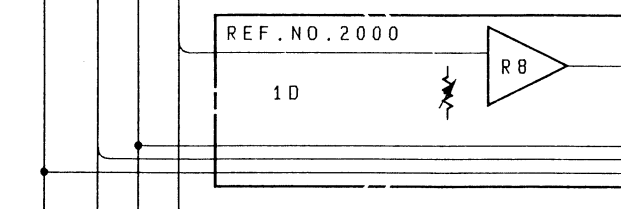
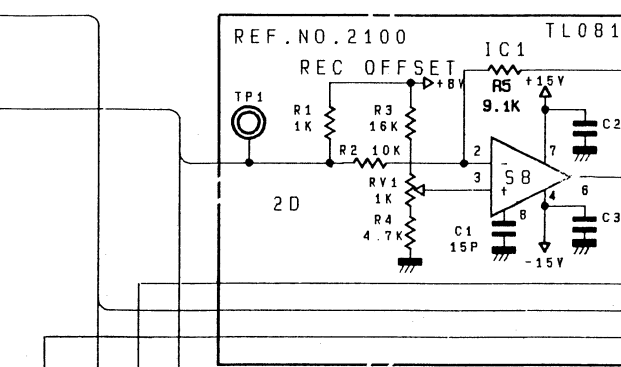
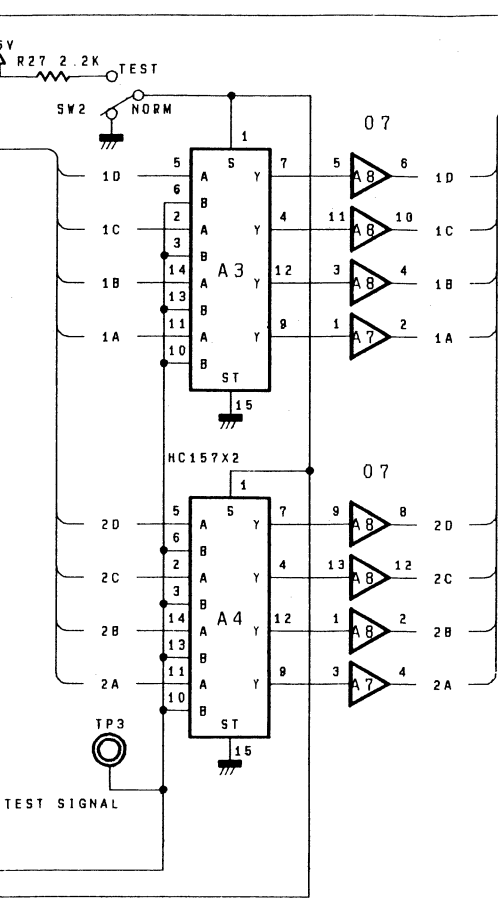
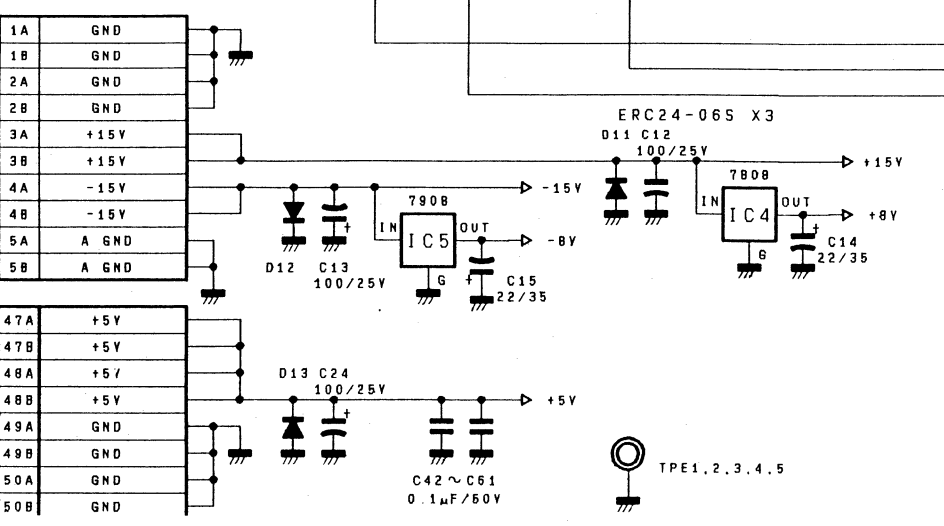
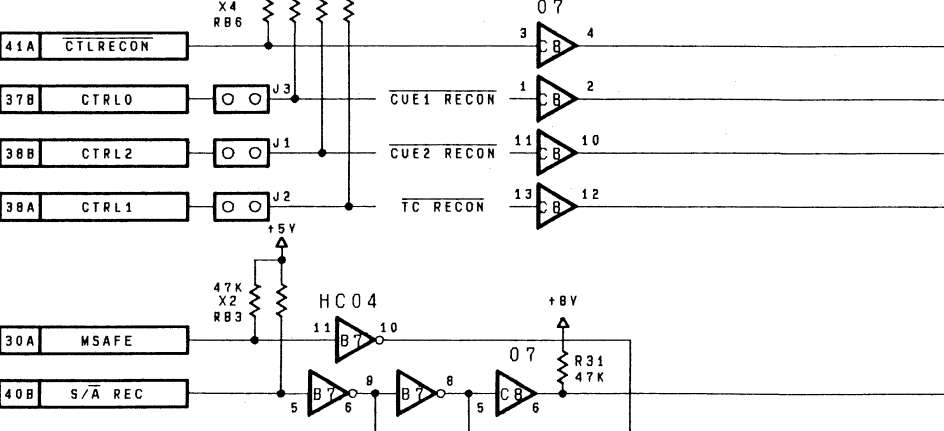
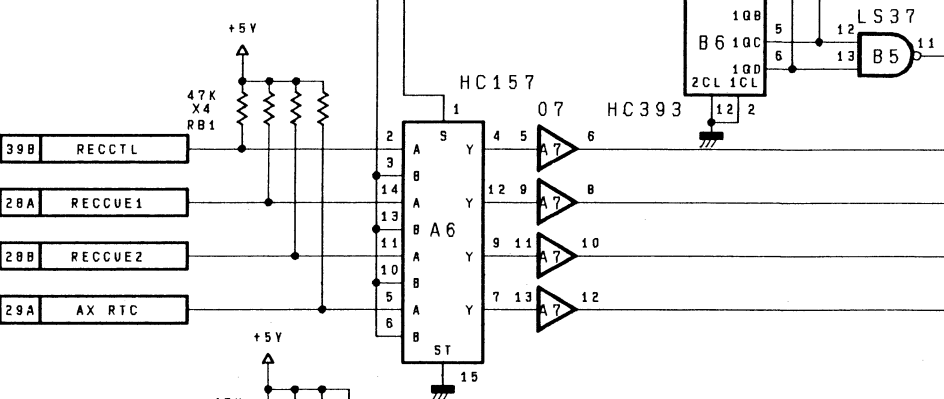
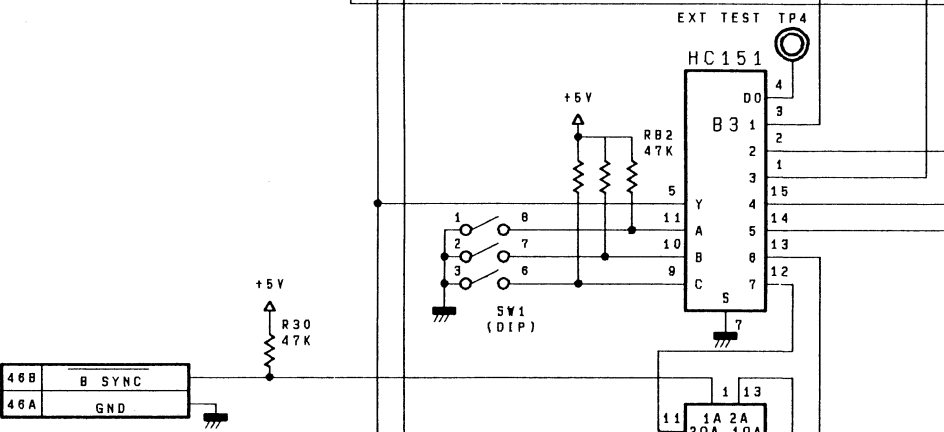
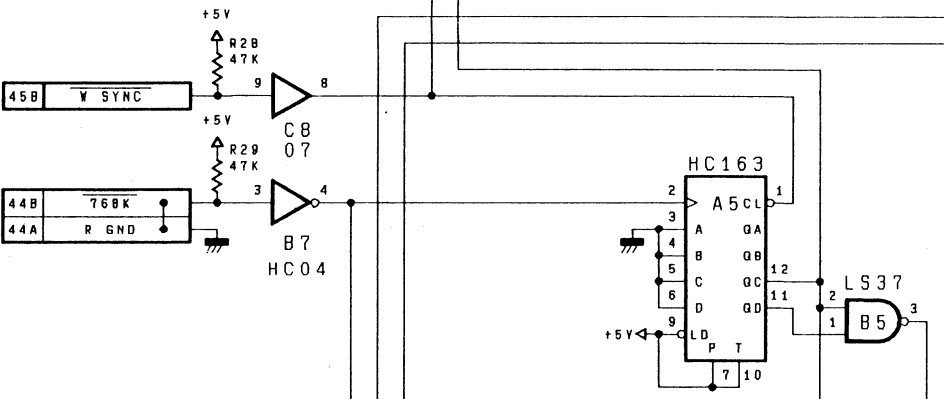
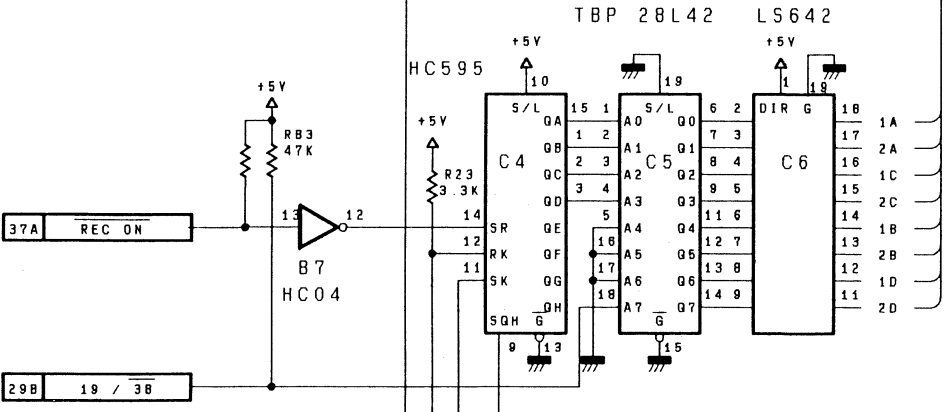


Variable Resistor

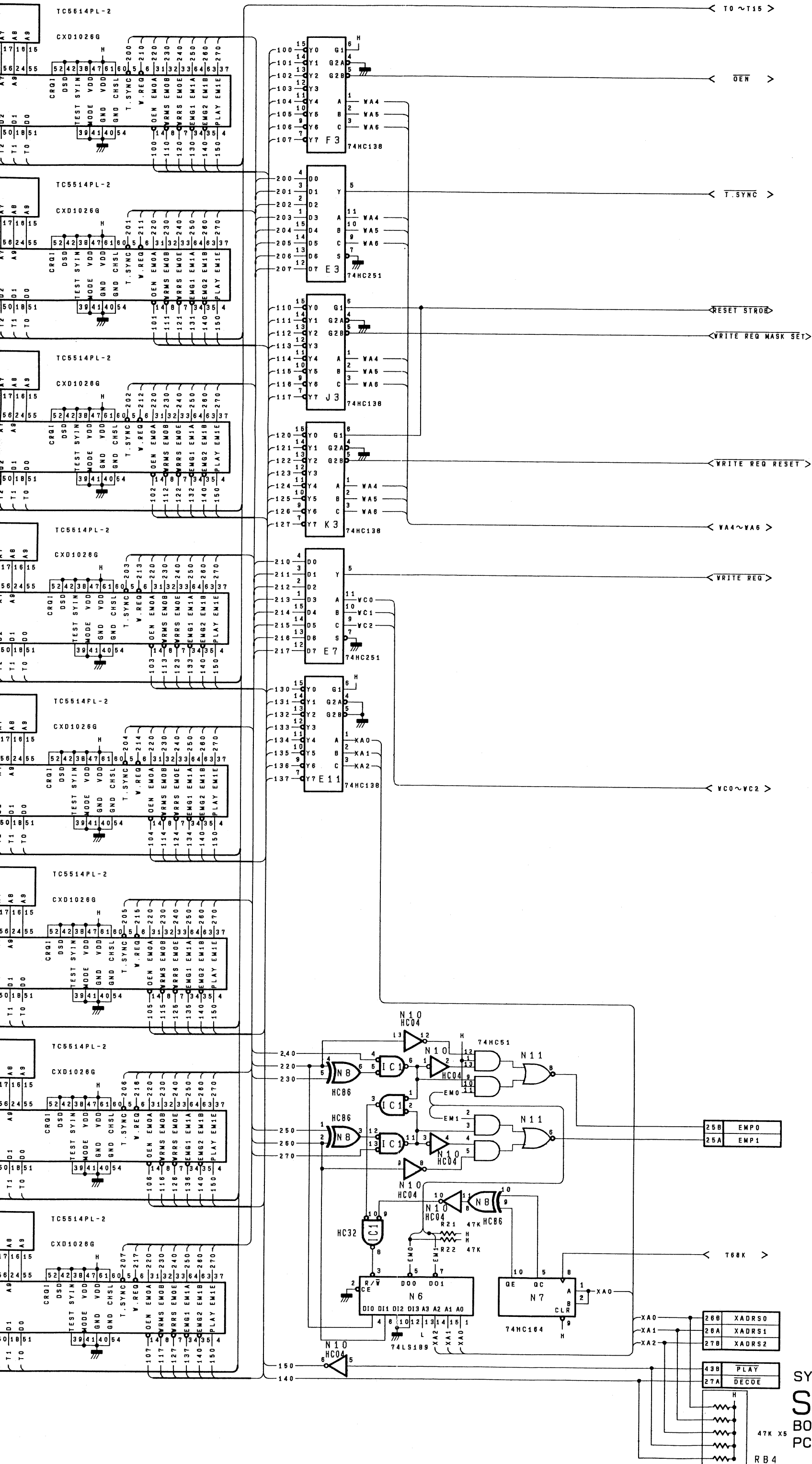
VR-56 BOARD

BOARD NO. 1-620-326-12
PCM-3402

24B	ENOUT1	1A
24A	ENOUT2	1B
25B	ENOUT3	1C
25A	ENOUT4	1D
26B	ENOUT5	2A
26A	ENOUT6	2B
27B	ENOUT7	2C
27A	ENOUT8	2D



IC2:4051BP #1,2,4,5,13,14



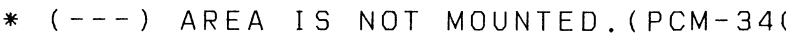
SYNC Separator

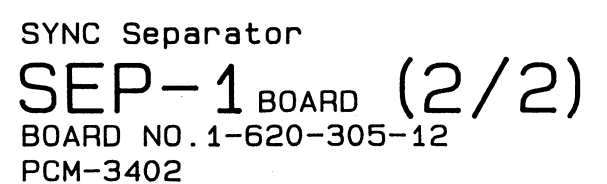
SEP-1 BOARD (1/2)

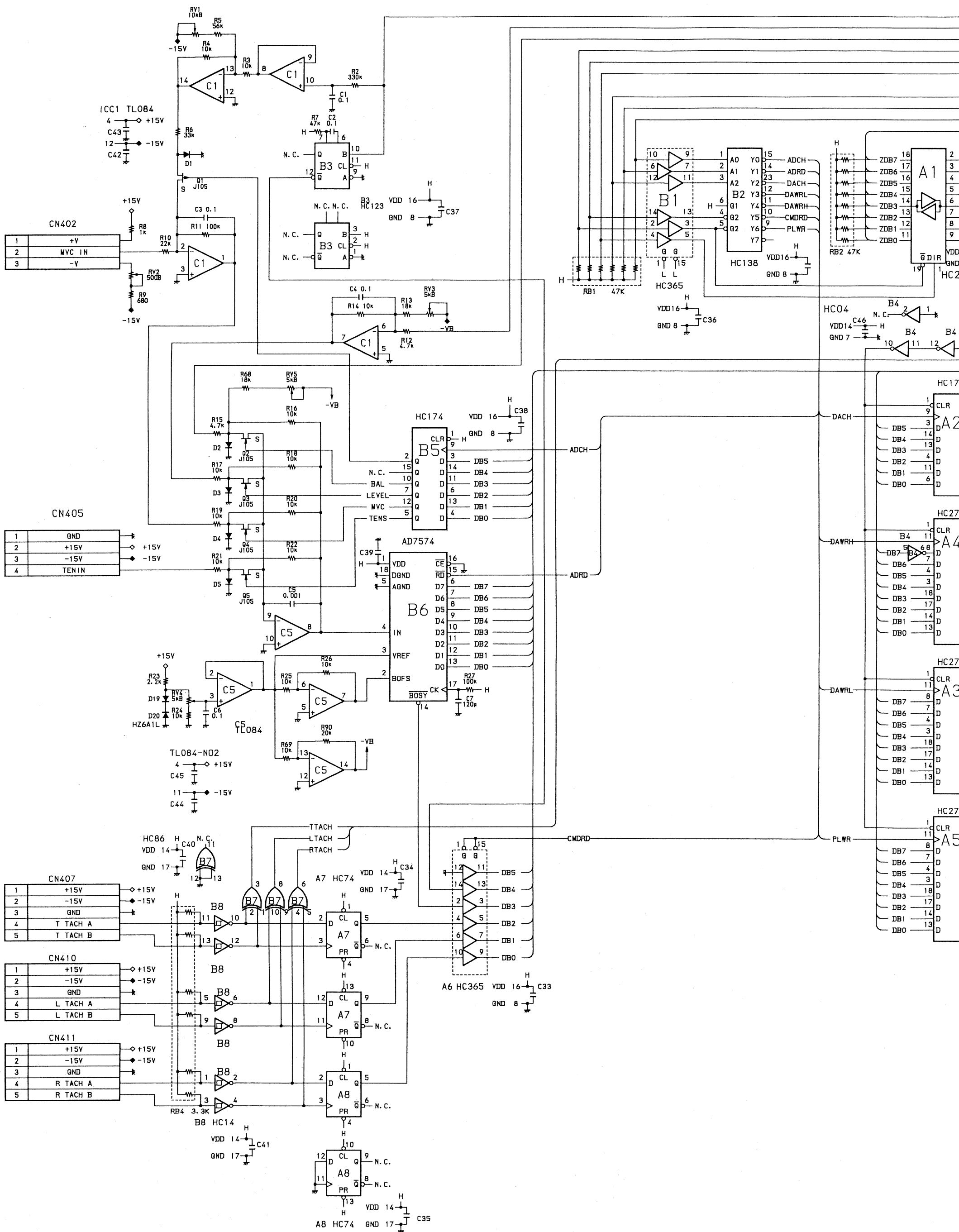
BOARD NO. 1-620-305-12
PCM-3402

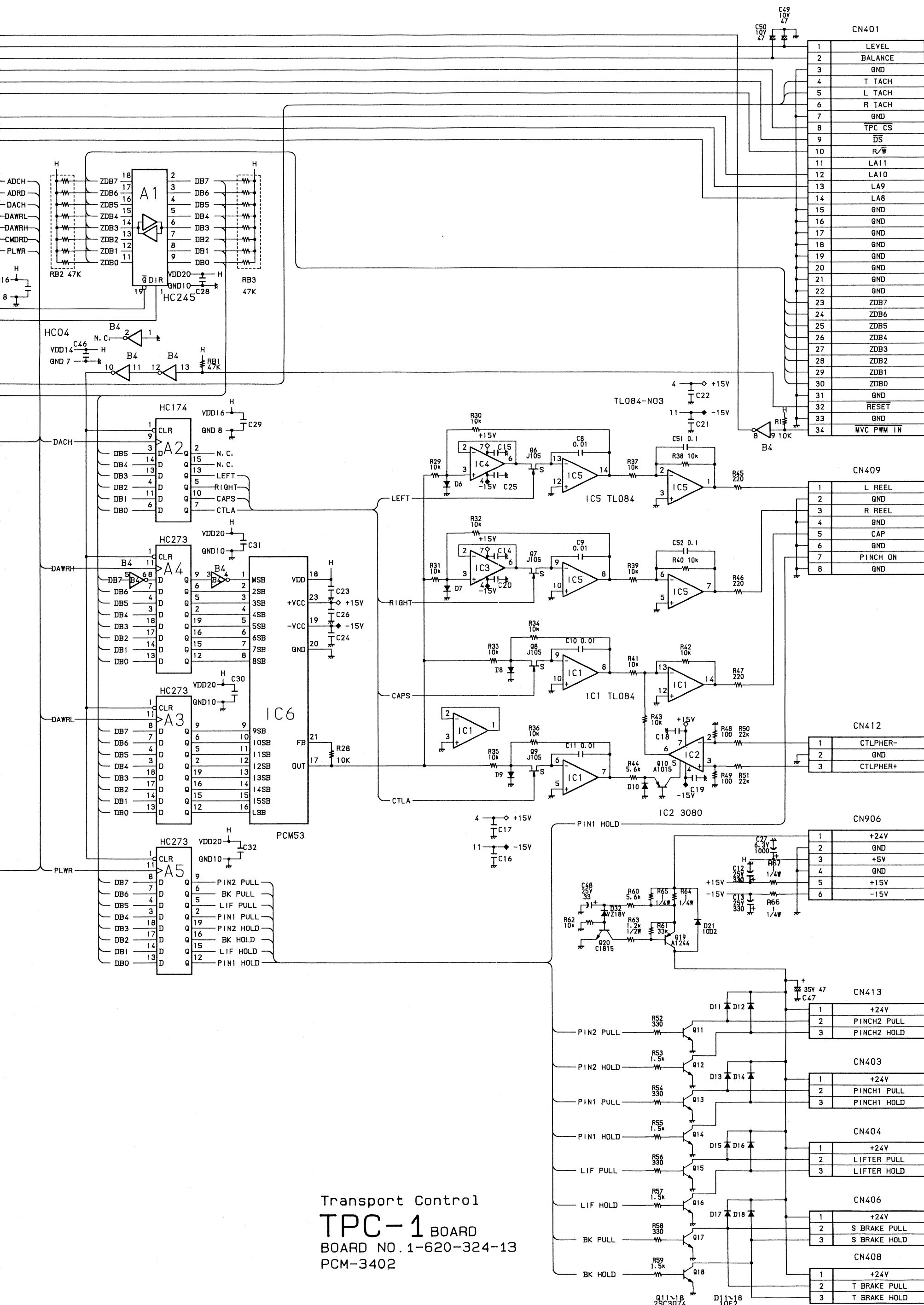
47K X5

RB4









Transport Control
TPC-1 BOARD
BOARD NO. 1-620-324-13
PCM-3402

CPU-34

CN420

GND	1	2	GND
GND	3	4	PCLK
GND	5	6	GND
GEN TCA	7	8	GEN TCB
GND	9	10	T TACH
L TACH	11	12	R TACH
BUS EN	13	14	DIB CS
DSC CS	15	16	TCC CS
LNT CS	17	18	TPC CS
DS	19	20	R/W
LA11	21	22	LA10
LA9	23	24	LA8
ZDB15	25	26	ZDB14
ZDB13	27	28	ZDB12
ZDB11	29	30	ZDB10
ZDB9	31	32	ZDB8
ZDB7	33	34	ZDB6
ZDB5	35	36	ZDB4
ZDB3	37	38	ZDB2
ZDB1	39	40	ZDB0
GND	41	42	RESET
GND	43	44	B PDI
FSYNC	45	46	REF30K
GND	47	48	GND
RGEN CLKA	49	50	RGEN CLKB
CHAS TGET	51	52	CHAS INTNL
EXT TC INT	53	54	PB TC INT
LNT INT	55	56	GND
GND	57	58	GND
GND	59	60	GND

CN421

GND	1	2	R/W
GND	3	4	DS
GND	5	6	KIBCS
GND	7	8	LA10
GND	9	10	LA11
GND	11	12	ZDB0
ZDB1	13	14	GND
ZDB2	15	16	ZDB3
GND	17	18	ZDB4
ZDB5	19	20	GND
ZDB6	21	22	ZDB7
GND	23	24	RESET
GND	25	26	
GND	27	28	PCLK
GND	29	30	GND
+5V	31	32	+5V
GND	33	34	GND

CN907

1	+5V
2	+5V
3	GND
4	GND
5	PDI

CN911

1	+5V
2	GND
3	GND

CN428

1	GND
2	SENS+
3	GND
4	LEDH1

CN427

Q4	1	2
RL2	3	4
RL4	5	6
RL6	7	8
	9	10
REW	11	12
PLAY	13	14
REC	15	16
EDIT	17	18
+5V	19	20

CN429

Q4	1	2
RL2	3	4
RL4	5	6
RL6	7	8
	9	10
REW	11	12
PLAY	13	14
REC	15	16
EDIT	17	18
+5V	19	20

CN432

1	+V
2	MVC IN
3	-V

P/S CN921

1	GND
2	GND
3	+5V
4	+5V
5	GND
6	+24V
7	-15V
8	GND
9	PDI
10	+15V
11	GND
12	GND

TPC-1

CN401

LEVEL	1	2	BALANCE
GND	3	4	T TACH
L TACH	5	6	R TACH
GND	7	8	TPC CS
DS	9	10	R/W
LA11	11	12	LA10
LA9	13	14	LA8
GND	15	16	GND
GND	17	18	GND
GND	19	20	GND
GND	21	22	GND
ZDB7	23	24	ZDB6
ZDB5	25	26	ZDB4
ZDB3	27	28	ZDB2
ZDB1	29	30	ZDB0
GND	31	32	RESET
GND	33	34	MVC PWM IN

CN402

1	+V
2	MVC IN
3	-V

CN408

1	+24V
2	T BRAKE PULL
3	T BRAKE HOLD

R BRAKE

CN406

1	+24V
2	S BRAKE PULL
3	S BRAKE HOLD

L BRAKE

CN413

1	+24V
2	PINCH2 PULL
3	PINCH2 HOLD

PRE PINCH

CN409

1	L REEL
2	GND
3	R REEL
4	GND
5	CAP
6	GND
7	PINCH ON
8	GND

CN407

1	+15V
2	-15V
3	GND
4	T TACH A
5	T TACH B

CN414

SE-53	T TACH
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TCS

CN403

1	+24V
2	PINCH1 PULL
3	PINCH1 HOLD

PINCH

CN412

1	CTL (-)
2	GND
3	CTL (+)

CN410

1	+15V
2	-15V
3	GND
4	L TACH A
5	L TACH B

CN414

SE-53	L TACH
-------	--------

TCS

CN404

1	+24V
2	LIFTER PULL
3	LIFTER HOLD

LIFTER

CN906

1	+24V
2	GND
3	+5V
4	GND
5	+15V
6	-15V

CN411

1	+15V
2	-15V
3	GND
4	R TACH A
5	R TACH B

CN414

SE-53	R TACH
-------	--------

CN405

1	GND
2	+15V
3	-15V
4	TENIN

CN413

SE-54	
-------	--

IF-151

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IF-151

< CN444 >

DR-54

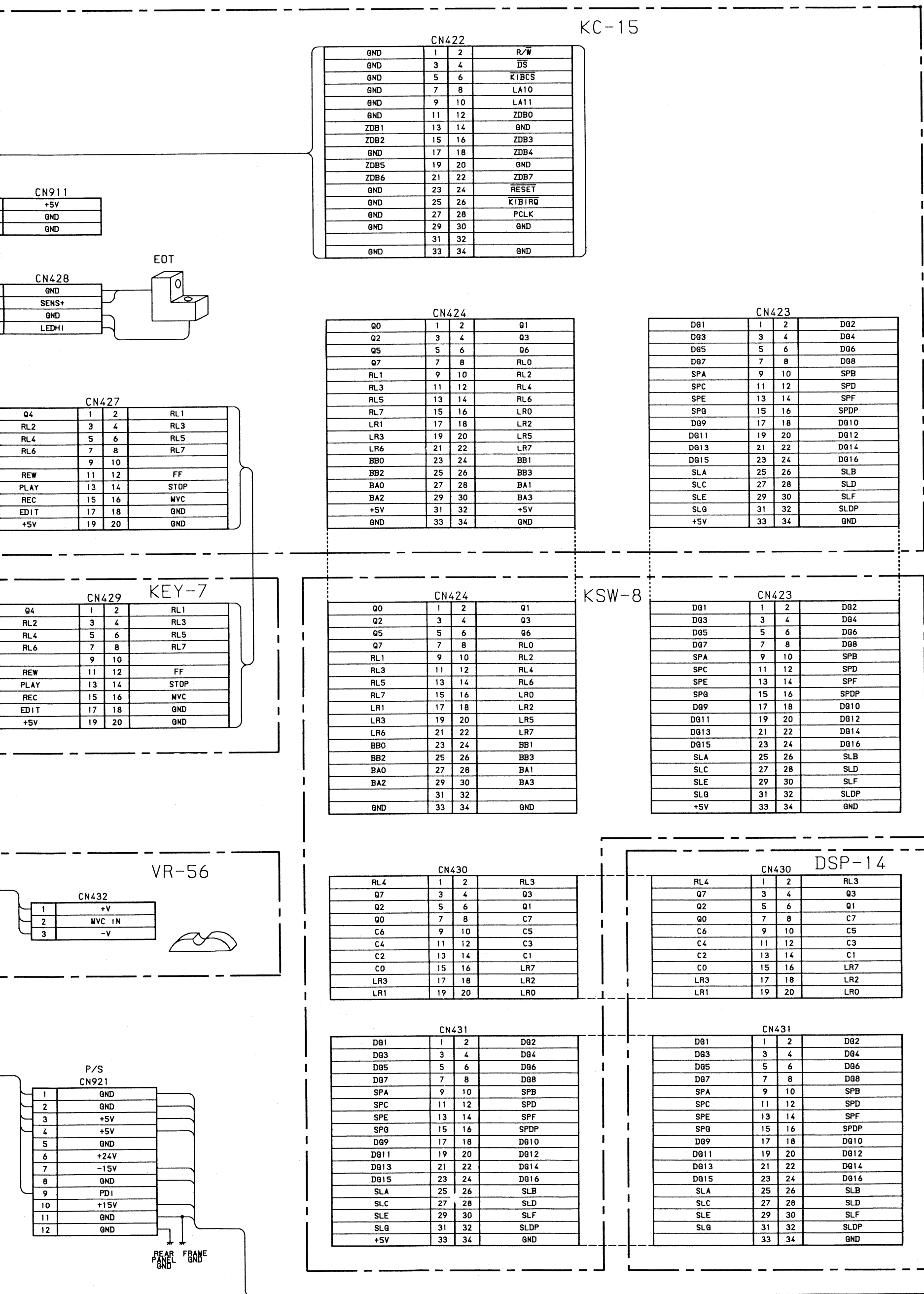
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MB-143

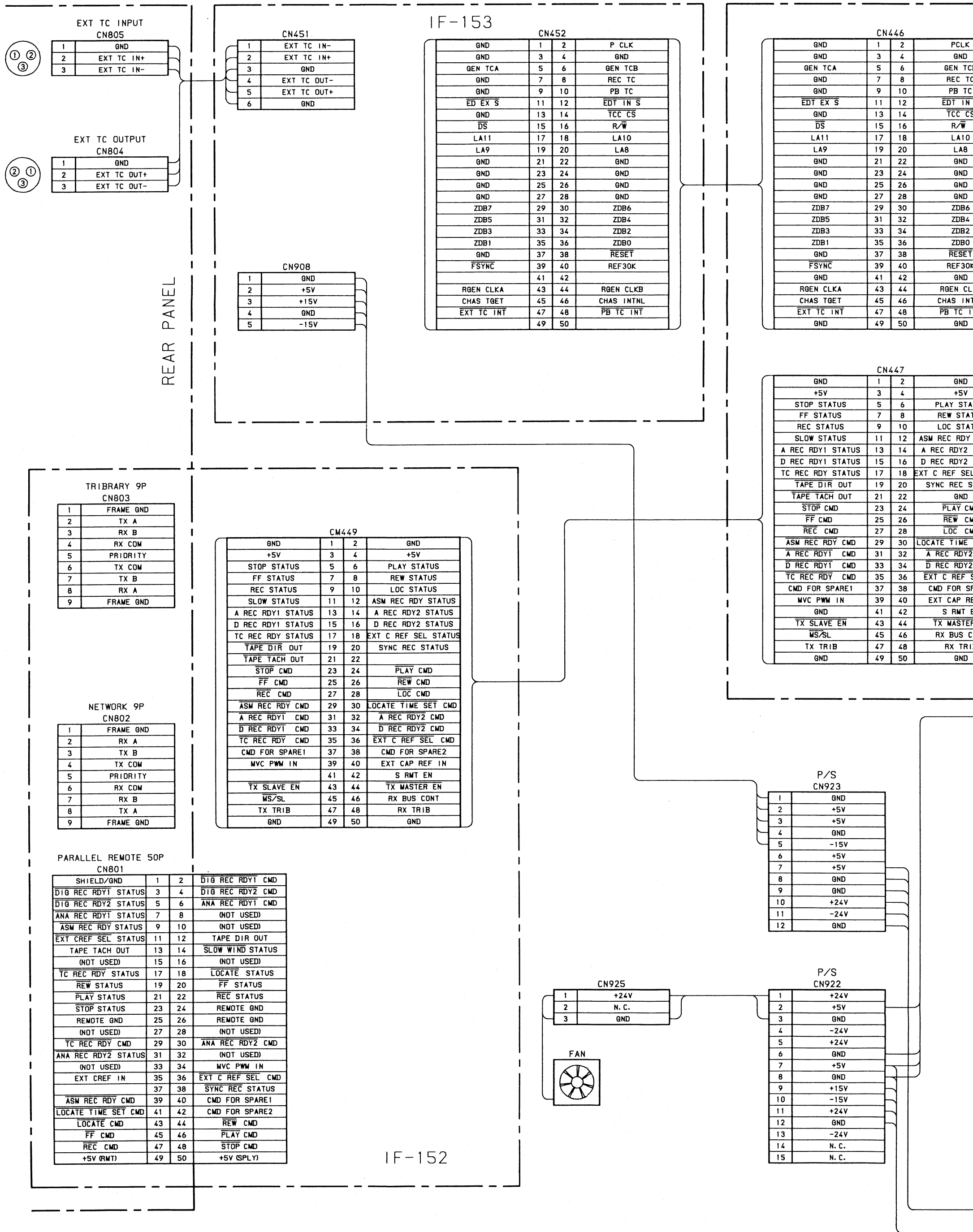
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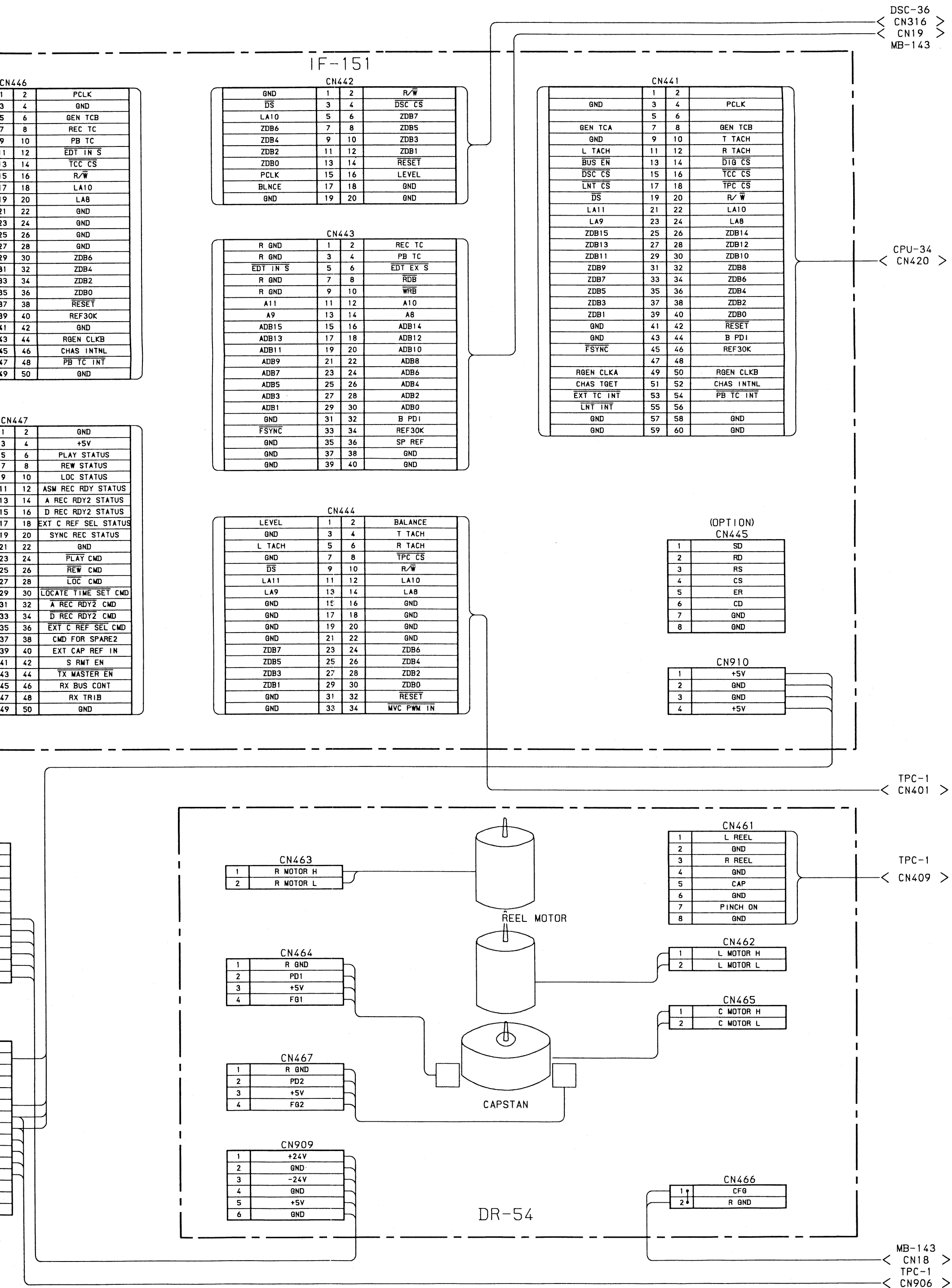
P/S

< CN922 >



DSC-36
CN905





MON REC HEAD
CN305

A-CUE1	1	2	R GND
R GND	3	4	A-CUE2
A GND	5	6	GND
A-2D	7	8	R GND
R GND	9	10	A-1D
A-2B	11	12	R GND
R GND	13	14	A-1B
A-2C	15	16	R GND
R GND	17	18	A-1C
A-2A	19	20	R GND
R GND	21	22	A-1A
A-CTL	23	24	R GND
R GND	25	26	A-TC

A-R/P HEAD
CN307

CUE1R/P+	1	2	CUE1R/P-
CUE1R/PB	3	4	CUE2R/PB
CUE2R/P-	5	6	CUE2R/P+
TCR/P-	7	8	TCR/PB
TCR/P+	9	10	AU GND
CUE1E+	11	12	CUE1E-
AU GND	13	14	AU GND
CUE2E+	15	16	CUE2E-
AU GND	17	18	AU GND
TCE+	19	20	TCE-
	21	22	
	23	24	
	25	26	

SYNC REC HEAD
CN308

S-CUE1	1	2	R GND
R GND	3	4	S-CUE2
A GND	5	6	A GND
S-2D	7	8	R GND
R GND	9	10	S-1D
S-2B	11	12	R GND
R GND	13	14	S-1B
S-2C	15	16	R GND
R GND	17	18	S-1C
S-2A	19	20	R GND
R GND	21	22	S-1A
S-CTL	23	24	R GND
R GND	25	26	S-TC

DIGITAL PB HEAD
CN306

PBCUE1S	1	2	PBCUE1F
PBCUE2S	3	4	PBCUE2F
A GND	5	6	A GND
PB2DS	7	8	PB2DF
PB1DS	9	10	PB1DF
PB2BS	11	12	PB2BF
PB1BS	13	14	PB1BF
PB2CS	15	16	PB2CF
PB1CS	17	18	PB1CF
PB2AS	19	20	PB2AF
PB1AS	21	22	PB1AF
PBCTLS	23	24	PBCTLF
PBTCS	25	26	PBTCF

H. B. U.

DET-4
CN301

PBOUT1	1	2	R GND
PBOUT2	3	4	R GND
PBOUT3	5	6	R GND
PBOUT4	7	8	R GND
PBOUT5	9	10	R GND
PBOUT6	11	12	R GND
PBOUT7	13	14	R GND
PBOUT8	15	16	R GND
PB CTL	17	18	R GND
A GND	19	20	A GND
AX PTC	21	22	R GND
PBCUE2	23	24	R GND
PBCUE1	25	26	R GND
X1/X2	27	28	19/38
A GND	29	30	A GND
+15V	31	32	+15V
-15V	33	34	-15V

CN302

R GND	1	2	PB2D
R GND	3	4	PB1D
R GND	5	6	PB2B
R GND	7	8	PB1B
R GND	9	10	PB2C
R GND	11	12	PB1C
R GND	13	14	PB2A
R GND	15	16	PB1A
R GND	17	18	PBCTLA
A GND	19	20	A GND
R GND	21	22	AX PTC
R GND	23	24	PBCUE2
R GND	25	26	PBCUE1
X1/X2	27	28	19/38
A GND	29	30	A GND
+15V	31	32	+15V
-15V	33	34	-15V

CN303

R GND	1	2	PB2D
R GND	3	4	PB1D
R GND	5	6	PB2B
R GND	7	8	PB1B
R GND	9	10	PB2C
R GND	11	12	PB1C
R GND	13	14	PB2A
R GND	15	16	PB1A
R GND	17	18	PBCTLA
A GND	19	20	A GND
R GND	21	22	AX PTC
R GND	23	24	PBCUE2
R GND	25	26	PBCUE1
X1/X2	27	28	19/38
A GND	29	30	A GND
+15V	31	32	+15V
-15V	33	34	-15V

CN304

PBCUE1S	1	2	PBCUE1F
PBCUE2S	3	4	PBCUE2F
A GND	5	6	A GND
PB2DS	7	8	PB2DF
PB1DS	9	10	PB1DF
PB2BS	11	12	PB2BF
PB1BS	13	14	PB1BF
PB2CS	15	16	PB2CF
PB1CS	17	18	PB1CF
PB2AS	19	20	PB2AF
PB1AS	21	22	PB1AF
PBCTLS	23	24	PBCTLF
PBTCS	25	26	PBTCF

PA-57

IF-151 (CN443)

(CN412) TPC-1
(CN466) DR-54

MB-14

CN17 DET-4

PBOUT1	1	2	R GND
PBOUT2	3	4	R GND
PBOUT3	5	6	R GND
PBOUT4	7	8	R GND
PBOUT5	9	10	R GND
PBOUT6	11	12	R GND
PBOUT7	13	14	R GND
PBOUT8	15	16	R GND
PB CTL	17	18	R GND
A GND	19	20	A GND
AX PTC	21	22	R GND
PBCUE2	23	24	R GND
PBCUE1	25	26	R GND
X1/X2	27	28	19/38
A GND	29	30	A GND
+15V	31	32	+15V
-15V	33	34	-15V

CN16 (MON REC)

A-CUE1	1	2	R GND
R GND	3	4	A-CUE2
A GND	5	6	GND
A-2D	7	8	R GND
R GND	9	10	A-1D
A-2B	11	12	R GND
R GND	13	14	A-1B
A-2C	15	16	R GND
R GND	17	18	A-1C
A-2A	19	20	R GND
R GND	21	22	A-1A
A-CTL	23	24	R GND
R GND	25	26	A-TC

CN21 (A-R/P)

CUE1R/P+	1	2	CUE1R/P-
CUE1R/PB	3	4	CUE2R/PB
CUE2R/P-	5	6	CUE2R/P+
TCR/P-	7	8	TCR/PB
TCR/P+	9	10	AU GND
TCE+	11	12	TCE-
AU GND	13	14	AU GND
CUE1E+	15	16	CUE1E-
AU GND	17	18	AU GND
CUE2E+	19	20	CUE2E-

CN15 (SYNC REC)

S-CUE1	1	2	R GND
R GND	3	4	S-CUE2
A GND	5	6	A GND
S-2D	7	8	R GND
R GND	9	10	S-1D
S-2B	11	12	R GND
R GND	13	14	S-1B
S-2C	15	16	R GND
R GND	17	18	S-1C
S-2A	19	20	R GND
R GND	21	22	S-1A
S-CTL	23	24	R GND
R GND	25	26	S-TC

CN924

1	+5V
2	+5V
3	GND
4	GND
5	A GND
6	+15V
7	-15V
8	AU GND
9	+15V
10	AU GND
11	-15V
12	+5V
13	GND
14	PS. CK
15	GND

CN901 (P/S)

A GND	1
-15V	2
+15V	3

CN904 (P/S)

GND	1
GND	2
+5V	3
+5V	4

P/S

CN412) TPC-1
(CN466) DR-54

DSC-36 (CN311)

(CN312) DSC-36

HP-31 (CN309)

MB-143

CN18 (DR-54) (TPC-1)

1	GND
2	CTL PHER+
3	CTL PHER-
4	
5	R GND
6	CFG

CN19 (IF-151)

R GND	1	2	REC TC
R GND	3	4	PB TC
EDT IN S	5	6	EDT EX S
R GND	7	8	RDB
R GND	9	10	WFB
A11	11	12	A10
A9	13	14	A8
ADB15	15	16	ADB14
ADB13	17	18	ADB12
ADB11	19	20	ADB10
ADB9	21	22	ADB8
ADB7	23	24	ADB6
ADB5	25	26	ADB4
ADB3	27	28	ADB2
ADB1	29	30	ADB0
GND	31	32	B PDI
FSYNC	33	34	REF30K
GND	35	36	SP REF
GND	37	38	GND
GND	39	40	GND

CN20 (DSC-36)

BWSYNC	1	2	BD1OB-1
BD1OB15	3	4	BD1OB14
BD1OB13	5	6	BD1OB12
BD1OB11	7	8	BD1OB10
BD1OB9	9	10	BD1OB8
BD1OB7	11	12	BD1OB6
BD1OB5	13	14	BD1OB4
BD1OB3	15	16	BD1OB2
BD1OB1	17	18	BD1OB0
2CH/4CH	19	20	XT/X2
19/38	21	22	
BT.152W	23	24	
MSAFE	25	26	
INACT	27	28	PBACT
	29	30	
GND	31	32	GND
GND	33	34	GND

CN901 (P/S)	
GND	1
15V	2
15V	3

CN902 (P/S)

-15V	1
+15V	2
AU GND	3
AU GND	4

CN904 (P/S)	
GND	1
GND	2
+5V	3
+5V	4

CN903 (P/S)

GND	1
PS. CK	2
GND	3
+5V	4

CN24 (DSC-36)(HP-31)

+15V	16	15	-15V
AU GND	14	13	AU GND
R GND	12	11	MON2
MON1	10	9	R GND
R GND	8	7	AM2
AM1	6	5	R GND
R GND	4	3	MON2
MON1	2	1	R GND

CN14 (ERROR STATUS)

CORCT -	1	2	CORCT +
PERD -	3	4	PERD +
ERA-	5	6	ERA+
ERB-	7	8	ERB+
DEC U/D-	9	10	DEC U/D+
GND	11	12	GND
+5V	13	14	+5V
1.536W-	15	16	1.536W+
BSYNC-	17	18	BSYNC+
A-MAIN-	19	20	A-MAIN+
CRC-	21	22	CRC+
PLAY	23	24	
	25	26	

CN26 (D1/O, SYNC10)

DOUT1-2-	1	2	DOUT1-2+
DOUT1-2B	3	4	DINI-2B
DINI-2+	5	6	DINI-2-
R GND	7	8	DOUT1
R GND	9	10	DOUT2
R GND	11	12	DINI
R GND	13	14	DIN2
AUXDIN1-	15	16	AUXDIN1+
AUXDIN1B	17	18	AUXDIN2B
AUXDIN2+	19	20	AUXDIN2-
WCLK	21	22	R GND
EWCLK	23	24	R GND
VIDEO	25	26	R GND

CN25 (AUX LINEOUT)

AIN2-	16	15	AIN2+
AIN2B	14	13	AIN1B
AIN1+	12	11	AIN1-
	10	9	
	8	7	
DDA1-	6	5	DDA1+
DDA2B	4	3	DDA1B
DDA2+	2	1	DDA2-

CN23 (A1/O, L1/O)

AOUT2+	26	25	AOUT2-
AOUT1B	24	23	AOUT2B
AOUT1-	22	21	AOUT1+
AIN2+	20	19	AIN2-
AIN1B	18	17	AIN2B
AIN1-	16	15	AIN1+
AU GND	14	13	AU GND
LOUT2+	12	11	LOUT2-
LOUT1B	10	9	LOUT2B
LOUT1-	8	7	LOUT1+
LIN2+	6	5	LIN2-
LIN1B	4	3	LIN2B
LIN1-	2	1	LIN1+

REAR PANEL

FOR SERVICE
ERROR STATUS

CORCT -	1	14	CORCT +
PERD -	2	15	PERD +
ERA-	3	16	ERA+
ERB-	4	17	ERB+
DEC U/D-	5	18	DEC U/D+
GND	6	19	GND
+5V	7	20	+5V
1.536W-	8	21	1.536W+
BSYNC-	9	22	BSYNC+
A-MAIN-	10	23	A-MAIN+
CRC-	11	24	CRC+
	12	25	
	13		

AES/EBU
DIGITAL
OUTPUT

CN816	
1	DOUT1-2B
2	DOUT1-2+
3	DOUT1-2-

DIGITAL
INPUT

CN815	
1	DINI-2B
2	DINI-2+
3	DINI-2-

AUX LINE OUT
CH-1

CN826	
1	DDA1B
2	DDA1+
3	DDA1-

CH-2

CN825	
1	DDA2B
2	DDA2+
3	DDA2-

LINE OUTPUT
CH2

CN820	
1	LOUT2B
2	LOUT2+
3	LOUT2-

CH1

CN819	
1	LOUT1B
2	LOUT1+
3	LOUT1-

LINE INPUT
CH2

CN818	
1	LIN2B
2	LIN2+
3	LIN2-

CH1

CN817	
1	LIN1B
2	LIN1+
3	LIN1-

SDIF-2

CN813	
1	DOUT1
2	R GND

OUT CH-2

CN814	
1	DOUT2
2	R GND

IN CH-1

CN811	
1	DINI
2	R GND

IN CH-2

CN812	
1	DIN2
2	R GND

WORDSYNC

CN810	
1	WCLK
2	R GND

OUT

CN809	
1	EWCLK
2	R GND

IN

CN807	
1	VIDEO
2	R GND

COMPSYNC

AUX TRACK
OUTPUT

CN824	
1	AOUT2B
2	AOUT2+
3	AOUT2-

CH2

CN823	
1	AOUT1B
2	AOUT1+
3	AOUT1-

CH1

CN822	
1	AIN2B
2	AIN2+
3	AIN2-

INPUT
CH2

CN821	
1	AIN1B
2	AIN1+
3	AIN1-

CH1

FRAME-2

PCM-3402

MON.
SPEAKER

CN321

1	SP
2	GND
3	GND

CN320

1	+5V
2	RSW
3	LSW
4	LLED
5	RLED

MA-25

CN320

1	+5V
2	RSW
3	LSW
4	LLED
5	RLED

CN318

1	R GND
2	MON1
3	R GND
4	MON2
5	+5V
6	+15V
7	-15V
8	GND

MA-24

CN313

1	R GND
2	MON1
3	R GND
4	MON2
5	+5V
6	+15V
7	-15V
8	GND

CN314

DSCH1	1	2	DSCH2
OVER	3	4	0DB
-1DB	5	6	-2DB
-3DB	7	8	-4DB
-5DB	9	10	-6DB
-7DB	11	12	-8DB
-9DB	13	14	-10DB
-12DB	15	16	-14DB
-16DB	17	18	-18DB
-20DB	19	20	-22DB
-24DB	21	22	-26DB
-28DB	23	24	-30DB
-32DB	25	26	-34DB
-36DB	27	28	-38DB
-40DB	29	30	-42DB
-44DB	31	32	-48DB
-52DB	33	34	-56DB
S-10DB	35	36	S-12DB
S-14DB	37	38	S-16DB
S-18DB	39	40	S-20DB

DSP-13

CN314

DSCH1	1	2	DSCH2
OVER	3	4	-0DB
-1DB	5	6	-2DB
-3DB	7	8	-4DB
-5DB	9	10	-6DB
-7DB	11	12	-8DB
-9DB	13	14	-10DB
-12DB	15	16	-14DB
-16DB	17	18	-18DB
-20DB	19	20	-22DB
-24DB	21	22	-26DB
-28DB	23	24	-30DB
-32DB	25	26	-34DB
-36DB	27	28	-38DB
-40DB	29	30	-42DB
-44DB	31	32	-48DB
-52DB	33	34	-56DB
S-10DB	35	36	S-12DB
S-14DB	37	38	S-16DB
S-18DB	39	40	S-20DB

CN316

GND	1	2	R/W
DS	3	4	OSC CS
LA10	5	6	ZDB7
ZDB6	7	8	ZDB5
ZDB4	9	10	ZDB3
ZDB2	11	12	ZDB1
ZDB0	13	14	RESET
PCLK	15	16	LEVEL
BLNCE	17	18	GND
	19	20	

DSC-36

C

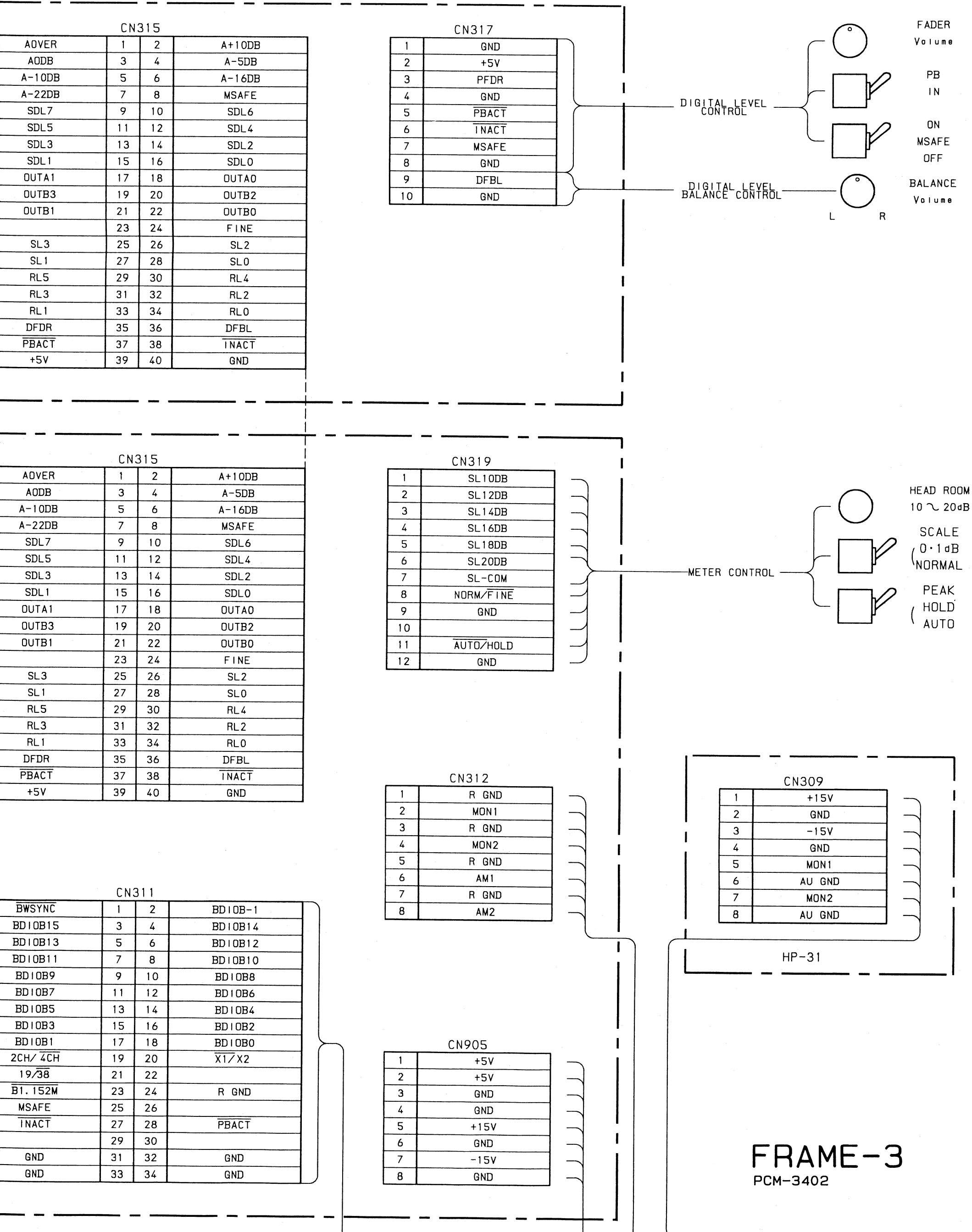
AOVER	1
AODB	3
A-10DB	5
A-22DB	7
SDL7	9
SDL5	11
SDL3	13
SDL1	15
OUTA1	17
OUTB3	19
OUTB1	21
	23
SL3	25
SL1	27
RL5	29
RL3	31
RL1	33
DFDR	35
PBACT	37
+5V	39

CN

AOVER	1
AODB	3
A-10DB	5
A-22DB	7
SDL7	9
SDL5	11
SDL3	13
SDL1	15
OUTA1	17
OUTB3	19
OUTB1	21
	23
SL3	25
SL1	27
RL5	29
RL3	31
RL1	33
DFDR	35
PBACT	37
+5V	39

CN

BWSYNC	1
BD10B15	3
BD10B13	5
BD10B11	7
BD10B9	9
BD10B7	11
BD10B5	13
BD10B3	15
BD10B1	17
2CH/4CH	19
19/38	21
B1.152M	23
MSAFE	25
INACT	27
	29
GND	31
GND	33



SECTION D
REPLACEABLE PARTS

D-1. PARTS ORDERING INFORMATION

Standardization of Parts
Repair parts supplied from Sony Parts Center may not be always identical with the part which actually in use due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts". This manual's exploded views and electrical parts list are indicating the parts numbers of the "standardized genuine parts at present".

Parts marked with S in the column of SP
These parts are normally stocked as replaceable parts.

Parts marked with O in the column of SP
Orders for these parts will be processed, but allow for additional delivery time.

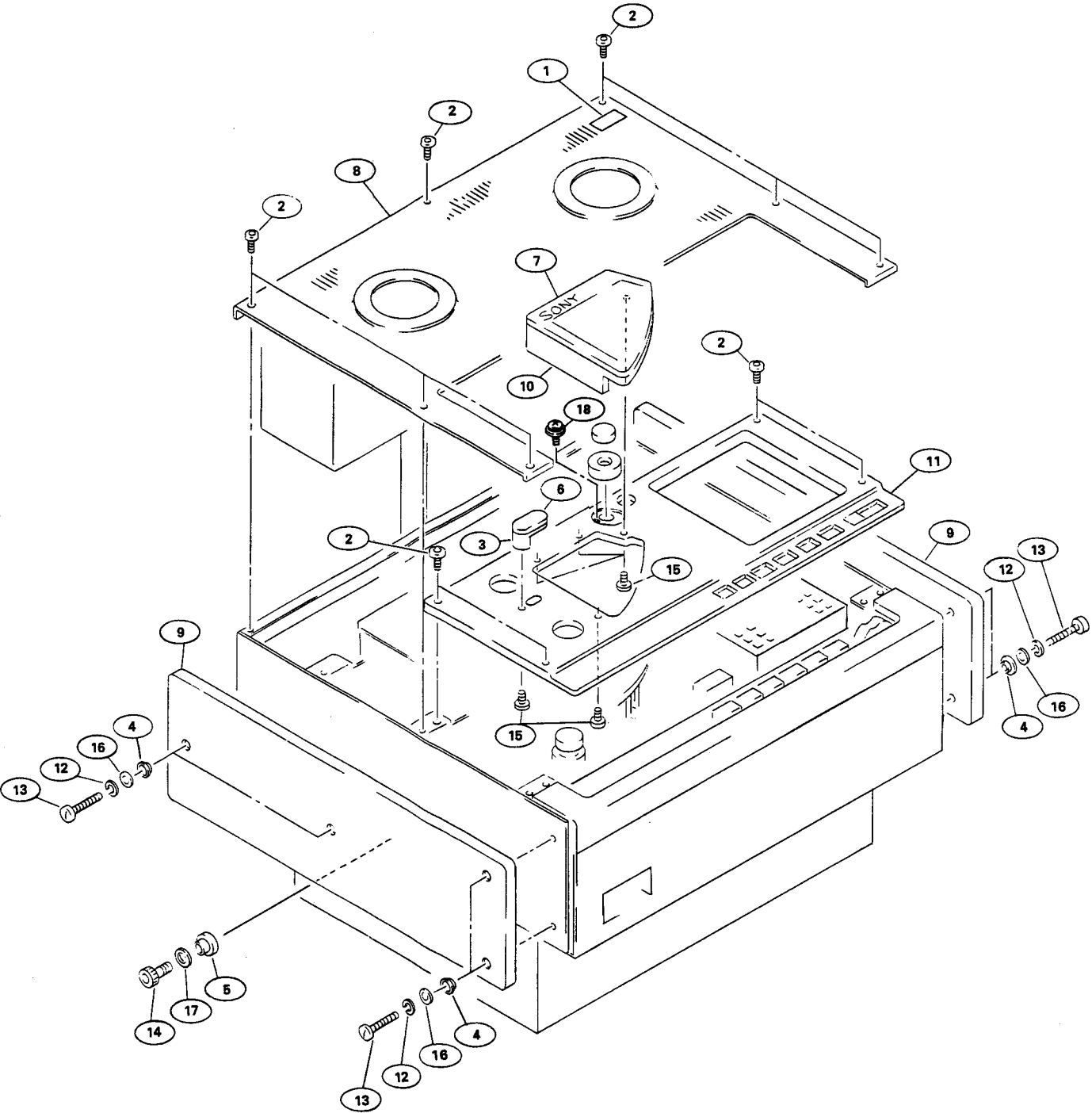
Parts without Part No.
These parts are not stocked because they are seldom required for routine service.

The components marked with Δ are critical to safe operation.
These components must be replaced with the same ones as described on the Parts List.

D-2. EXPLODED VIEWS AND PARTS LIST

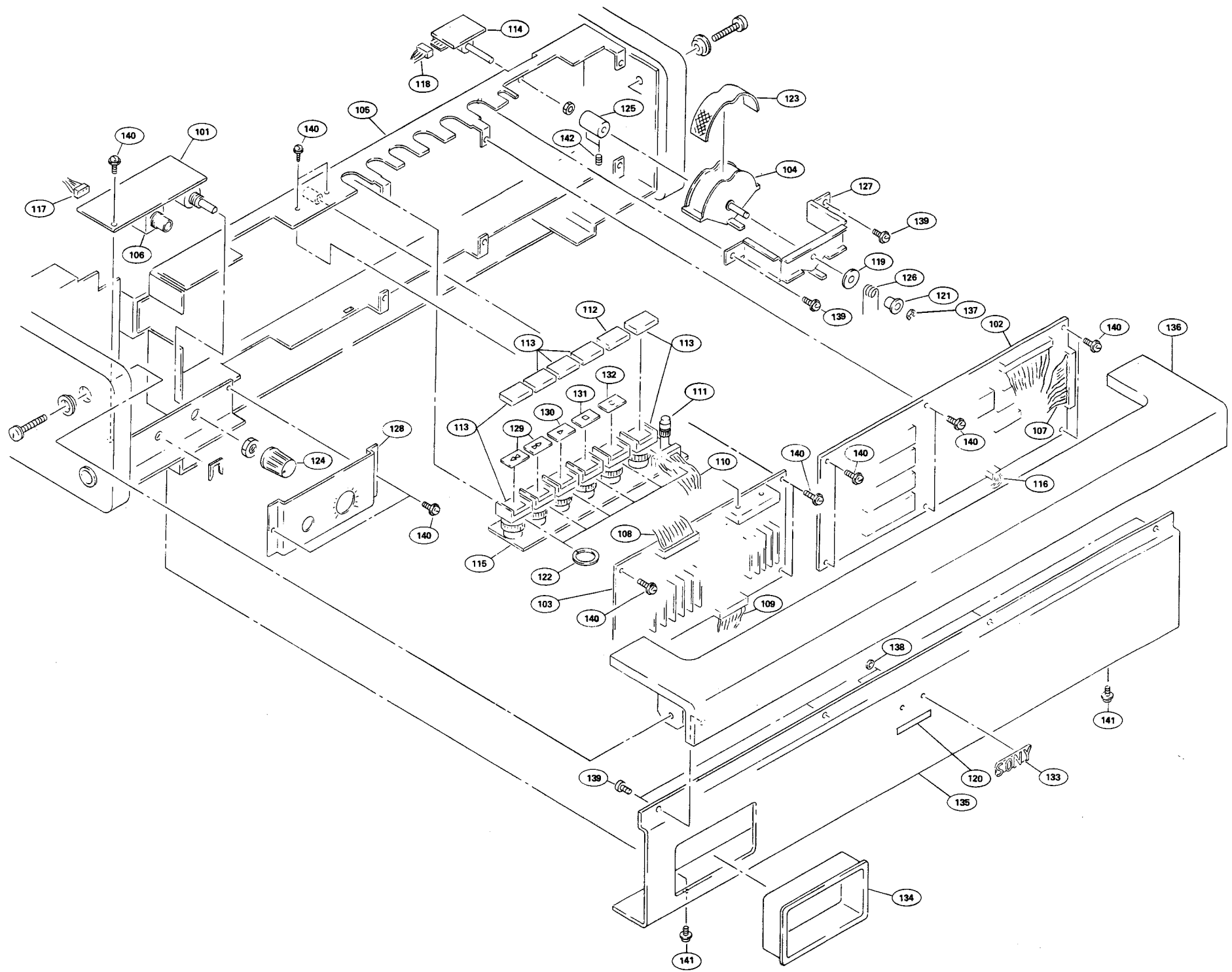
ORNAMENTAL PANELS

Index			
No.	SP	Parts No.	Description
1	S	3-703-079-31	LABEL, CAUTION (BACK)
2	S	4-882-768-06	SCREW, BUTTON HEAD (M4x8)
3	O	4-920-526-01	CAP, TENSION REGULATOR
4	S	4-920-527-01	WASHER, ORNAMENTAL
5	O	4-920-546-01	SHAFT, RETAINER, MAIN
6	O	4-920-570-01	CAP, ORNAMENTAL
7	O	4-920-600-01	PLATE, ORNAMENTAL, HEAD
8	O	4-920-624-01	PLATE, TOP
9	O	4-920-627-01	PLATE, SIDE, WOOD
10	O	4-920-655-01	COVER, HEAD
11	O	4-920-658-01	CHASSIS, ORNAMENTAL
12	S	7-623-210-22	SW 4, TYPE 2
13	S	7-682-567-09	SCREW +B4x25
14	S	7-683-355-07	BOLT, HEXAGON 6x16
15	S	7-685-196-21	SCREW +P3x18 TYPE2 SLIT
16	S	7-688-004-12	W4, MIDDLE
17	S	7-688-006-02	W6, SMALL
18	S	7-682-948-01	SCREW +PSW3x8



FRONT PANEL FRONT PANEL

FRONT PANEL

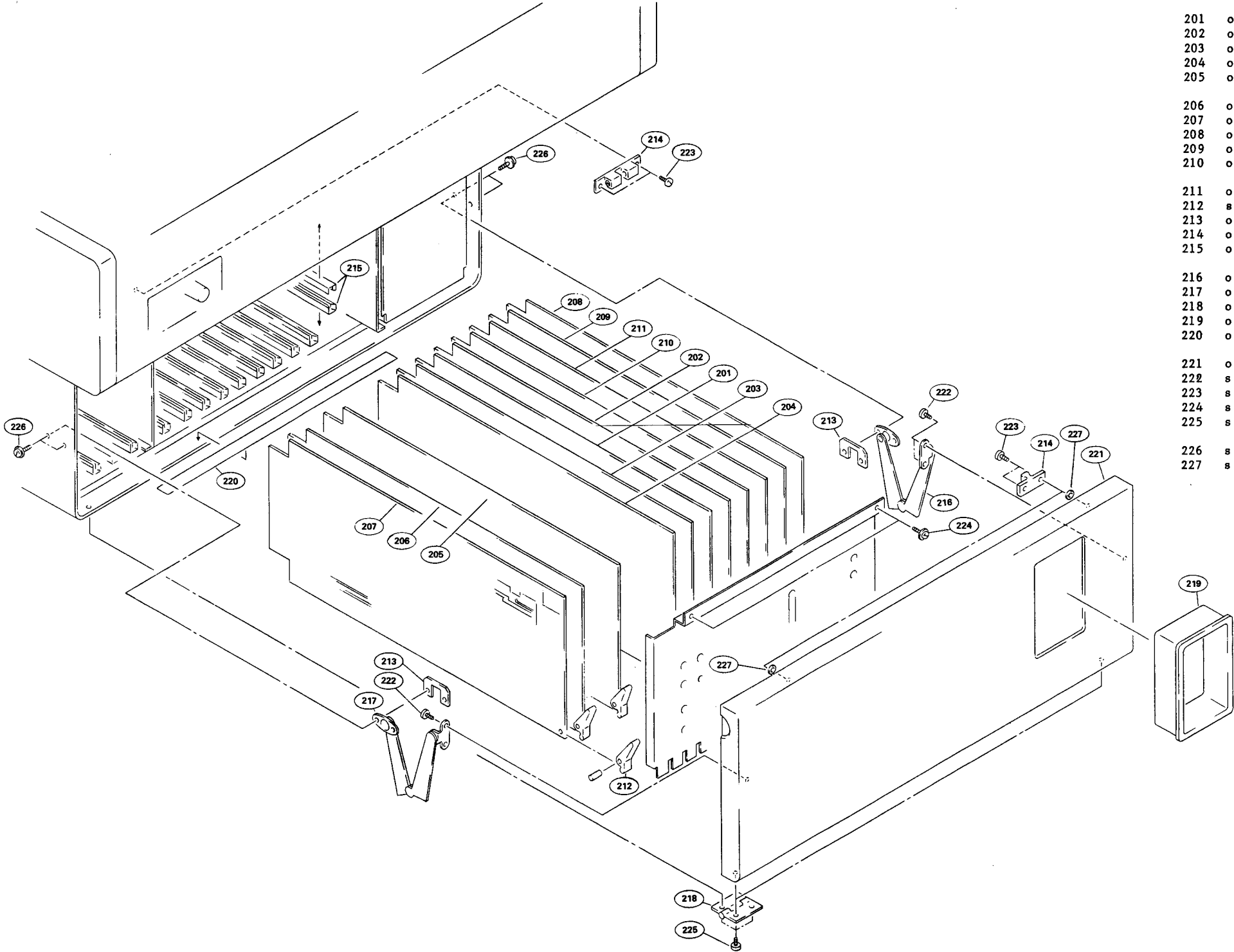


Index No.	SP	Parts No.	Description
101	o	A-7850-488-A	MOUNTED PCB, HP-31
102	o	A-7850-505-A	COMPLETE PCB, CPU-34
103	o	A-7850-511-A	COMPLETE PCB, DET-4
104	o	X-4920-516-1	DIAL ASSY
105	o	X-4920-525-1	PLATE ASSY, FSW
106	s	1-507-931-11	JACK, LARGE TYPE
107	o	1-559-222-11	CABLE ASSY, CPU FLAT
108	o	1-559-224-11	CABLE ASSY, DET FLAT
109	o	1-559-225-11	CABLE ASSY, PRE FLAT
110	o	1-559-231-11	CABLE ASSY, KEY FLAT
111	s	1-571-126-11	SWITCH
112	s	1-571-127-11	SWITCH
113	s	1-571-127-21	SWITCH
114	o	1-620-326-11	PC BOARD, VR-56
115	o	1-620-327-11	PC BOARD, KEY-7
116	o	1-938-895-11	HARNESS (MONITOR POWER)
117	o	1-938-902-11	HARNESS (METER.HEADPHONE)
118	o	1-938-912-11	HARNESS (SHUTTLE)
119	s	2-223-917-02	WASHER
120	s	3-701-690-00	LABEL (MADE IN JAPAN)
121	s	4-313-734-00	BUSHING TR,Y
122	s	4-869-960-00	RETAINER, THRUST
123	o	4-882-426-00	RUBBER, DIAL, SHUTTLE
124	s	4-906-510-01	KNOB (LARGE), ROTARY
125	o	4-920-516-01	TUBE, SHUTTLE
126	o	4-920-517-01	SPRING
127	o	4-920-518-01	RETAINER, SHUTTLE
128	o	4-920-545-01	PLATE, ORNAMENTAL, HP
129	o	4-920-572-01	FILM, FFWD BUTTON
130	o	4-920-573-01	FILM, PLAY BUTTON
131	o	4-920-574-01	FILM, STOP BUTTON
132	o	4-920-575-01	FILM, REC BUTTON
133	s	4-920-581-01	EMBLEM, SONY
134	o	4-920-599-11	ESCUTCHEON
135	o	4-920-630-01	PLATE, FRONT
136	o	4-920-631-01	PAD
137	s	7-624-104-04	STOP RING 2, TYPE -E
138	s	7-624-200-01	NUT, PUSH 1.5
139	s	7-682-647-09	SCREW +PS3x6
140	s	7-682-947-01	SCREW +PSW3x6
141	s	4-847-802-00	SCREW 4x8, CASE STOPPER
142	s	7-683-238-01	SET-SCT, HEX. 3x4 FLAT POINT

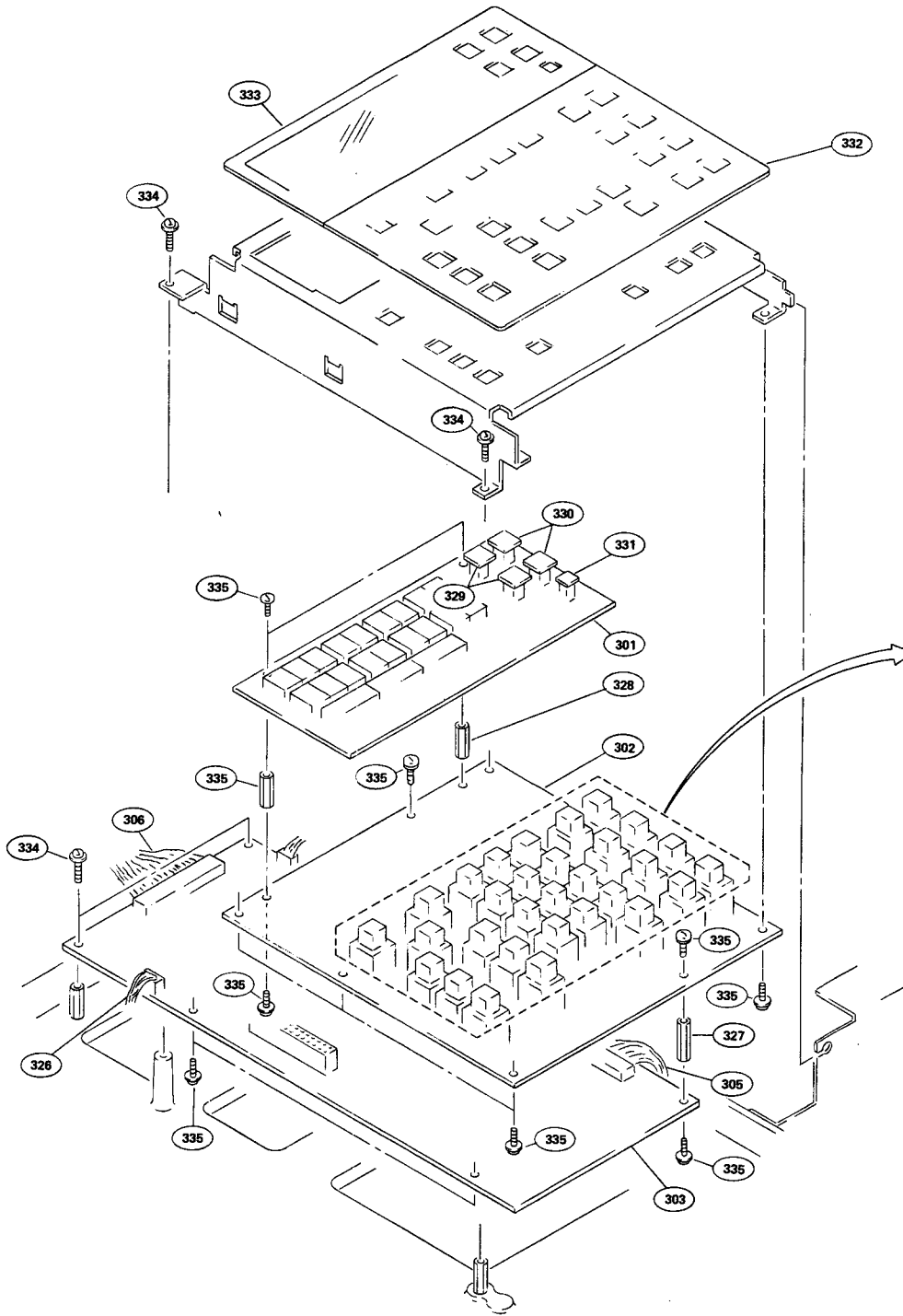
CARD RACK

CARD RACK

CARD RACK

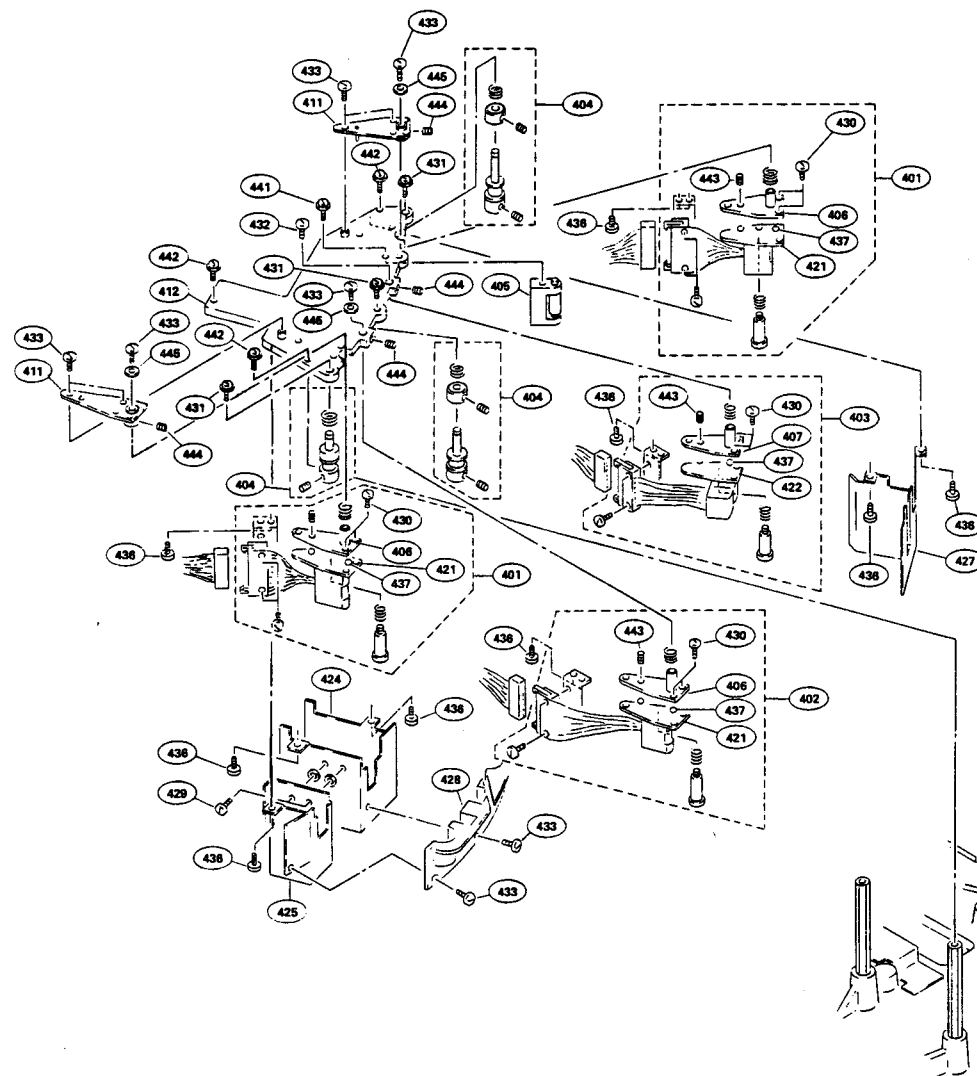


Index No.	SP	Parts No.	Description
201	o	A-7850-466-A	MOUNTED PCB, ED-16
202	o	A-7850-467-A	MOUNTED PCB, ED-17
203	o	A-7850-468-A	COMPLETE PCB, CTL-1
204	o	A-7850-470-A	COMPLETE PCB, MCK-1
205	o	A-7850-472-A	COMPLETE PCB, DIO-2
206	o	A-7850-474-A	COMPLETE PCB, DAD-1
207	o	A-7850-476-A	COMPLETE PCB, ARP-1
208	o	A-7850-495-A	COMPLETE PCB, REC-1
209	o	A-7850-497-A	MOUNTED PCB, SEP-1
210	o	A-7850-498-A	MOUNTED PCB, MDM-2
211	o	A-7850-499-A	MOUNTED PCB, MDC-1
212	s	2-251-622-11	LEVER, PC BOARD
213	o	2-526-728-11	BRACKET, STAY, JACK
214	o	3-153-721-00	CATCHER, BALL
215	o	3-673-676-41	RAIL, GUIDE, PC BOARD
216	o	3-711-271-01	STAY (RIGHT)
217	o	3-711-271-11	STAY (LEFT)
218	o	3-711-283-02	HINGE (B-1100 SERIES)
219	o	4-920-599-01	ESCUTCHEON
220	o	4-920-601-01	LABEL
221	o	4-920-638-01	DOOR, FRONT
222	s	7-682-345-04	SCREW +RK3x4
223	s	7-682-347-04	SCREW +RK3x6
224	s	2-375-131-01	SCREW +B3x4
225	s	7-682-947-09	SCREW +PSW3x6
226	s	7-682-948-09	SCREW +PSW 3x8
227	s	7-623-422-07	LW3, TYPE B

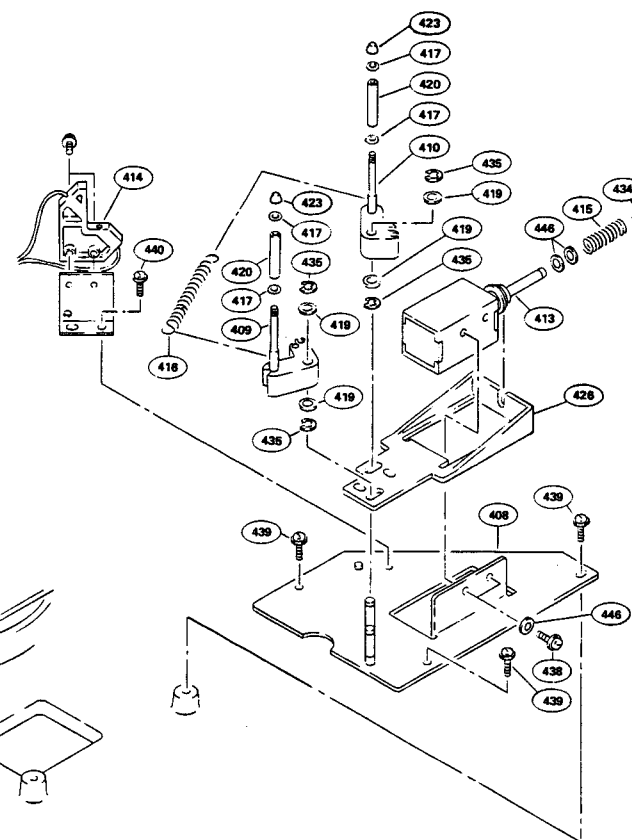


Index			
No.	SP	Parts No.	Description
301	o	A-7850-502-A	MOUNTED PCB, DSP-14
302	o	A-7850-503-A	MOUNTED PCB, KSW-8
303	o	A-7850-504-A	MOUNTED PCB, KC-15
304	s	1-554-041-11	SWITCH, PUSH
305	o	1-559-231-11	CABLE ASSY, KEY FLAT
306	o	1-559-232-11	CABLE ASSY, KC FLAT
307	s	1-570-212-11	SWITCH, PUSH
308	s	1-570-212-21	SWITCH, PUSH
309	s	1-570-212-31	SWITCH, PUSH
310	s	1-570-212-41	SWITCH, PUSH
311	s	1-570-212-51	SWITCH, PUSH
312	s	1-570-212-61	SWITCH, PUSH
313	s	1-570-212-71	SWITCH, PUSH
314	s	1-570-212-81	SWITCH, PUSH
315	s	1-570-212-91	SWITCH, PUSH
316	s	1-570-214-21	SWITCH, PUSH
317	s	1-571-063-11	SWITCH, PUSH
318	s	1-571-063-21	SWITCH, PUSH
319	s	1-571-063-31	SWITCH, PUSH
320	s	1-571-063-41	SWITCH, PUSH
321	s	1-571-063-51	SWITCH, PUSH
322	s	1-571-063-61	SWITCH, PUSH
323	s	1-571-063-71	SWITCH, PUSH
324	s	1-571-063-81	SWITCH, PUSH
325	s	1-571-063-91	SWITCH, PUSH
326	o	1-938-899-12	HARNESS (EOT)
327	o	2-066-111-07	SUPPORT
328	o	2-280-622-31	SUPPORT (M3x12), HEXAGON
329	o	3-711-156-01	KEY CAP (R)
330	o	3-711-157-01	KEY CAP (ARROW)
331	o	4-920-509-01	CAP (GRAY PLAIN), KEY
332	o	4-920-596-01	SHEET (164), PANEL
333	o	4-920-652-01	GLASS, DSP
334	s	7-682-947-01	SCREW +PSW3x6
335	s	7-682-948-01	SCREW +PSW3x8

TAPE SHIFTER, HBU



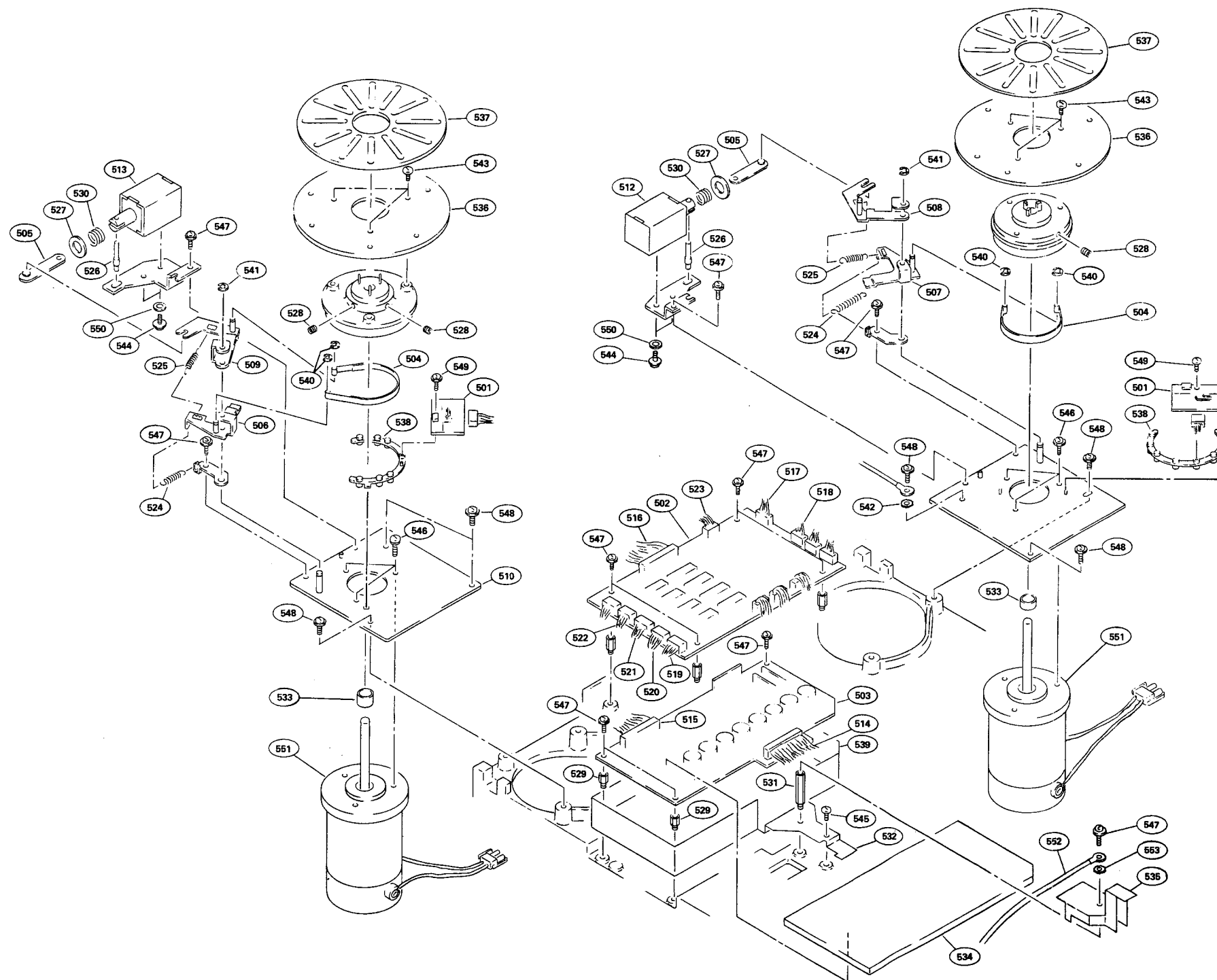
D-9



D-10

Index No.	SP	Parts No.	Description
401	s	A-7810-308-A	HEAD ASSY, D REC
402	s	A-7810-309-A	HEAD ASSY, D PB
403	s	A-7810-310-A	HEAD ASSY, A
404	s	A-7810-294-A	GUIDE ASSY, TAPE
405	s	A-7810-295-A	FILTER ASSY, SCRAPE
406	o	X-4920-505-1	PLATE (UPPER) ASSY, HEAD, D
407	o	X-4920-506-1	PLATE (UPPER) ASSY, HEAD, A
408	o	X-4920-507-1	PLATE ASSY, SHIFTER
409	o	X-4920-508-1	ARM (1) ASSY, SHIFTER
410	o	X-4920-509-1	ARM (2) ASSY, SHIFTER
411	o	X-4920-518-1	PLATE (2) ASSY, HEAD, D
412	o	X-4920-522-1	PLATE ASSY, HBU
413	s	1-454-448-11	SOLENOID, SHIFTER PLUNGER
414	o	1-938-899-11	HARNES (EOT)
415	o	3-534-853-00	SPRING, COMPRESSION
416	s	3-509-128-00	SPRING, TENSION
417	s	3-672-250-00	RING (M2.6)
418	s	3-701-439-21	WASHER
419	s	3-701-441-11	WASHER
420	o	4-888-484-01	RING, SHIFTER, TAPE
421	o	4-920-529-01	HEAD (LOWER), D
422	o	4-920-531-01	HEAD (LOWER), A
423	o	4-920-540-01	CAP, SHIFTER
424	o	4-920-607-01	SHIELD (INNER), HEAD
425	o	4-920-608-01	SHIELD (LEFT), HEAD
426	o	4-920-609-01	LINK (1), SHIFTER
427	o	4-920-651-01	SHIELD (RIGHT), HEAD
428	o	4-920-659-01	PLATE, BLIND
429	s	7-621-259-25	SCREW, +P2.6x4
430	s	7-621-259-39	SCREW, +P2.6x5
431	s	7-621-759-35	SCREW, +PSW 2.6x5
432	s	7-621-775-10	SCREW, +B 2.6x4
433	s	7-621-775-40	SCREW, +B 2.6x8
434	s	7-624-105-04	STOP RING 2.3, TYPE -E
435	s	7-624-106-04	STOP RING 3, TYPE -E
436	s	7-628-254-20	SCREW +PS2.6x8
437	s	7-671-154-01	STENLESS BALL
438	s	7-682-646-09	SCREW +PS3x5
439	s	7-682-648-09	SCREW +PS3x8
440	s	7-682-947-01	SCREW +PSW3x6
441	s	7-682-949-09	SCREW +PSW3x10
442	s	7-682-962-01	SCREW +PSW4x10
443	s	7-683-173-31	SET-SCREW, SLOT 3x3 CUP POINT
444	s	7-683-238-01	SET-SCT, HEX. 3x4 FLAT POINT
445	s	7-688-002-11	W2.6, MIDDLE
446	s	7-688-003-11	W3, MIDDLE

REEL MOTOR (S, T)

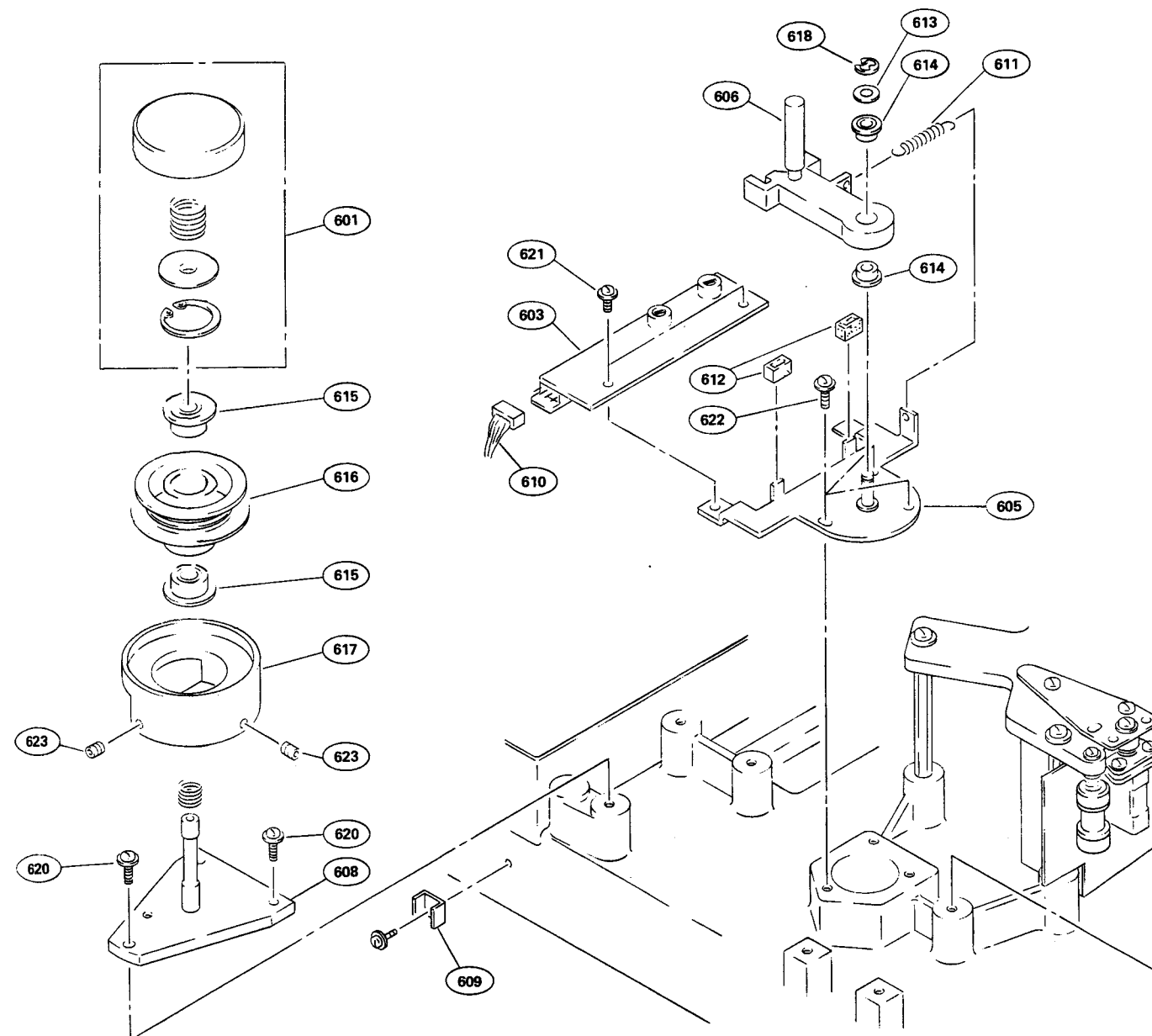


D-11

Index No.	SP	Parts No.	Description
501	o	A-7850-479-A	MOUNTED PCB, SE-53
502	o	A-7850-482-A	COMPLETE PCB, TPC-1
503	o	A-7850-507-A	COMPLETE PCB, PA-57
504	s	X-3673-601-0	BAND ASSY, BRAKE
505	o	X-3673-608-2	JOINT ASSY
506	o	X-4920-502-1	LINK (S1) ASSY, BRAKE
507	o	X-4920-503-1	LINK (T1) ASSY, BRAKE
508	o	X-4920-511-1	LINK (T2) ASSY, BRAKE
509	o	X-4920-517-1	LINK (S2) ASSY, BRAKE
510	o	X-4920-530-1	BRACKET (S) ASSY, MOTOR
511	o	X-4920-531-1	BRACKET (T) ASSY, MOTOR
512	s	1-454-426-61	SOLENOID, PLUNGER
513	s	1-454-426-61	SOLENOID, PLUNGER
514	o	1-559-221-11	CABLE ASSY, D.PB HEAD FLAT
515	o	1-559-225-11	CABLE ASSY, PRE FLAT
516	o	1-559-226-11	CABLE ASSY, TPC FLAT
517	o	1-938-906-11	HARNESS (MOTOR CONTROL)
518	o	1-938-907-11	HARNESS (DR)
519	o	1-938-908-11	HARNESS (R.TACH)
520	o	1-938-909-11	HARNESS (L.TACH)
521	o	1-938-910-11	HARNESS (T.TACH)
522	o	1-938-911-11	HARNESS (TENSION)
523	o	1-938-914-11	HARNESS (IF.TPC POWER)
524	o	3-537-216-00	SPRING, TENSION
525	s	3-578-390-00	SPRING, TENSION
526	o	3-673-810-00	PIN, SOLENOID
527	s	3-701-447-21	WASHER, 10
528	s	3-701-509-00	SET SCREW, DOUBLE CUP 3x8
529	o	3-880-616-00	BOSS
530	s	4-836-109-00	SPRING, COMPRESSION
531	o	4-853-743-00	BOSS
532	o	4-920-537-01	SHIELD (LOWER), WIRE
533	o	4-920-567-01	TUBE, REEL
534	o	4-920-586-01	LID, PRE
535	o	4-920-590-01	SHIELD (UPPER), WIRE
536	o	4-920-591-01	TABLE, REEL
537	s	4-920-614-01	SHEET, REEL
538	o	4-920-615-01	GUIDE, BAND, BREAK
539	o	4-920-617-01	BOX, PRE
540	s	7-624-105-04	STOP RING 2.3, TYPE -E
541	s	7-624-106-04	STOP RING 3, TYPE -E
542	s	7-627-423-07	LW 4, TYPE B
543	s	7-682-547-09	SCREW +B3x6
544	s	7-682-646-09	SCREW +PS3x5
545	s	7-682-647-09	SCREW +PS3x6
546	s	7-682-662-09	SCREW +PS4x10
547	s	7-682-947-01	SCREW +PSW3x6
548	s	7-682-962-01	SCREW +PSW4x10
549	s	7-685-646-79	SCREW +BVTP 3x8 TYPE2 SLIT
550	s	7-688-003-11	W3, MIDDLE
551	s	8-835-251-01	MOTOR, DC TS3233E11
552	o	1-939-298-51	HARNESS (HEAD SHEILD)
553	s	7-623-308-07	LW3 TYPE A

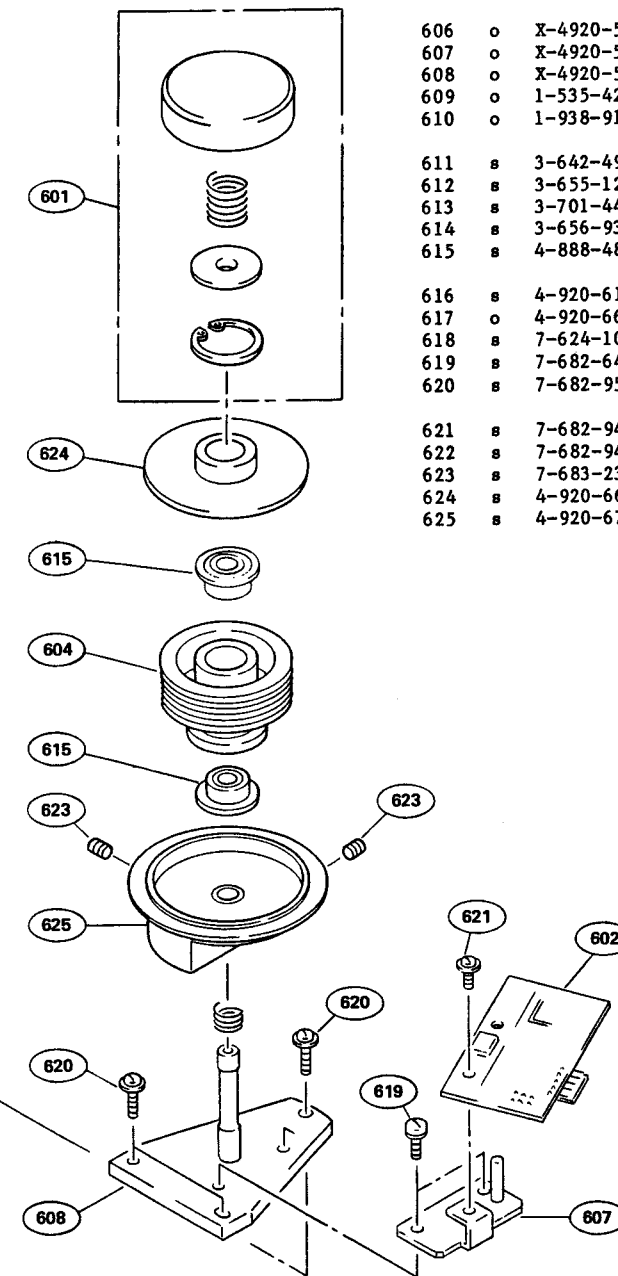
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TENSION REGULATOR, TIMER AND GUIDE ROLLERS



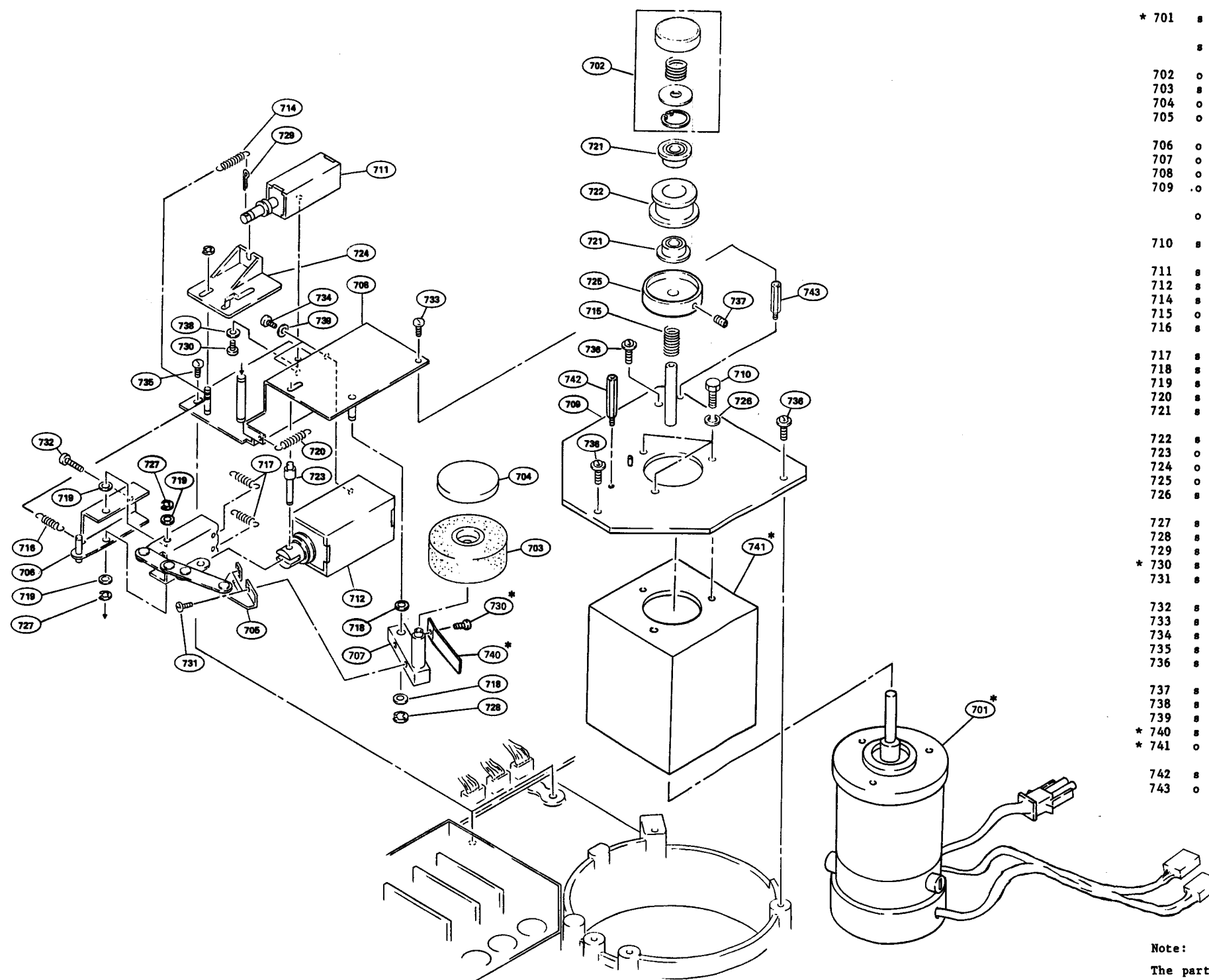
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Index No.	SP	Parts No.	Description
601	o	A-7810-304-A	CAP ASSY, ROLLER
602	o	A-7850-479-A	MOUNTED PCB, SE-53
603	o	A-7850-484-A	MOUNTED PCB, SE-54
604	s	X-4920-510-4	ROLLER ASSY, TIMER
605	o	X-4920-514-1	PLATE ASSY, TENSION REGULATOR
606	o	X-4920-515-1	ARM ASSY
607	o	X-4920-519-1	SUPPORT ASSY, DME
608	o	X-4920-520-1	BOSS ASSY, ROLLER
609	o	1-535-420-00	TAB, FASTEN
610	o	1-938-911-11	HARNESS (TENSION)
611	s	3-642-491-00	SPRING, TENSION
612	s	3-655-122-00	TIRE, S BRAKE
613	s	3-701-441-01	WASHER
614	s	3-656-932-00	BEARING (FLANGE), BALL
615	s	4-888-483-01	BEARING, BALL
616	s	4-920-613-04	ROLLER, GUIDE
617	o	4-920-665-01	GUIDE (LARGE)
618	s	7-624-106-04	STOP RING 3, TYPE -E
619	s	7-682-647-09	SCREW +P83x6
620	s	7-682-950-01	SCREW +PSW3x12
621	s	7-682-947-01	SCREW +P9W3x6
622	s	7-682-948-01	SCREW +PSW3x8
623	s	7-683-239-08	SCREW M3x5
624	s	4-920-669-01	FLANGE, UPPER
625	s	4-920-670-01	FLANGE, LOWER



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CAPSTAN MOTOR AND PINCH ROLLER ASSY



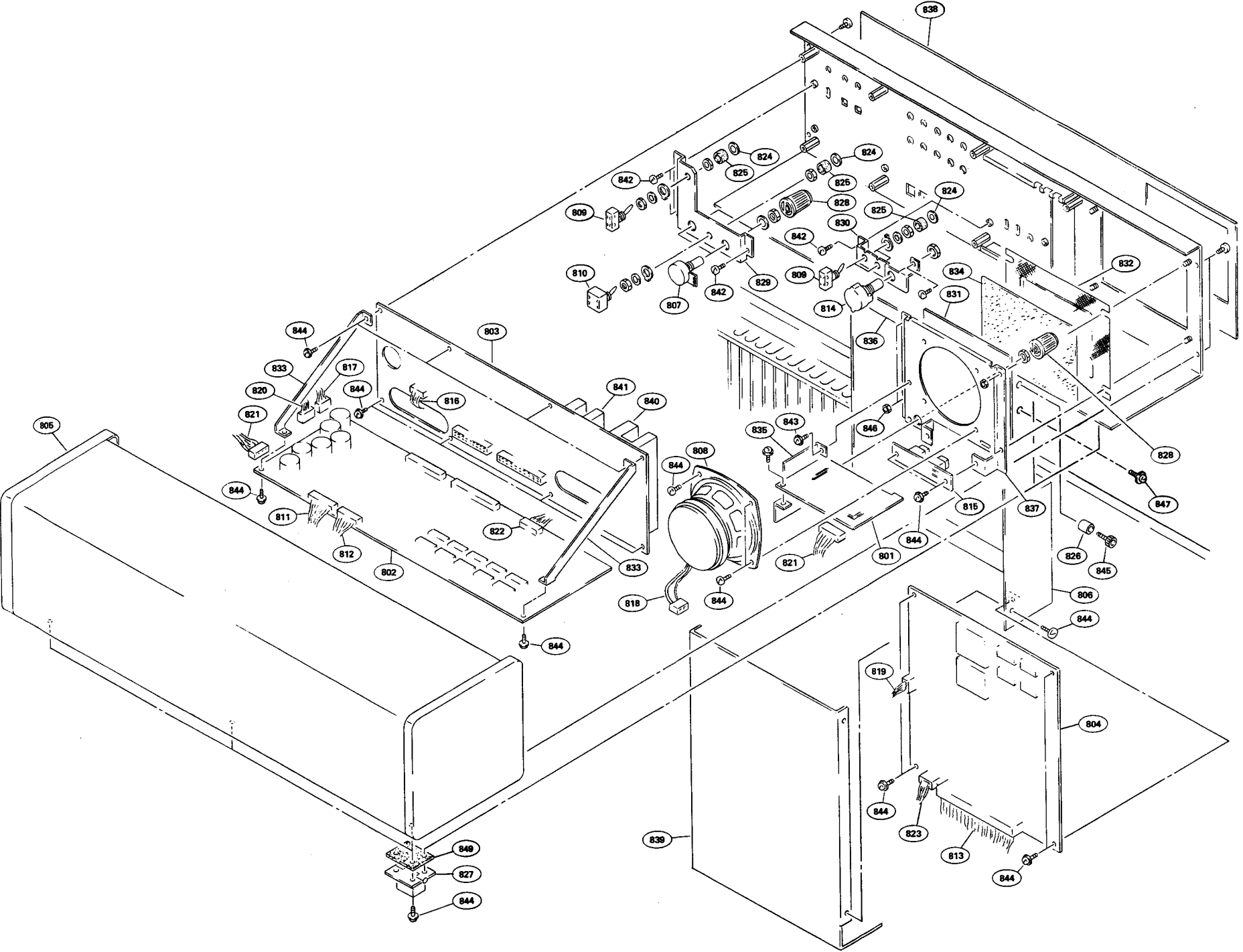
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Index No.	SP	Parts No.	Description
* 701	s	A-7810-344-A	MOTOR ASSY, CAPSTAN (Up to Serial No. 10900)
	s	A-7810-458-A	MOTOR ASSY, CAPSTAN (Serial No. 10901 and higher)
702	o	A-7810-288-A	CAP ASSY, T ROLLER
703	s	X-3711-508-1	P/R PUCK ASSY
704	o	X-3711-509-1	P/R CAP ASSY
705	o	X-4920-504-1	LINK (1) ASSY
706	o	X-4920-512-1	LINK (6) ASSY
707	o	X-4920-513-1	PINCH LEVER ASSY
708	o	X-4920-523-1	BRACKET ASSY, PINCH
709	o	X-4920-524-1	BRACKET ASSY, CAPSTAN (Up to Serial No. 10900)
	o	X-4920-524-2	BRACKET ASSY, CAPSTAN (Serial No. 10901 and higher)
710	s	4-920-687-01	INCH SCREW, No.10 -32x12.7
711	s	1-454-449-12	SOLENOID, PRE PLUNGER
712	s	1-454-450-11	SOLENOID, PINCH PLUNGER
714	s	3-579-048-00	SPRING, TENSION
715	o	3-642-421-01	SPRING, COMPRESSION
716	s	3-648-626-00	SPRING, TENSION
717	s	3-676-494-00	SPRING, TENSION
718	s	3-701-443-01	WASHER, 5
719	s	3-701-443-21	WASHER, 5
720	s	4-858-760-00	SPRING, TENSION
721	s	4-888-483-01	BEARING, BALL
722	s	4-920-522-03	ROLLER, T
723	o	4-920-563-01	PIN, SOLENOID
724	o	4-920-611-01	CAM, SOLENOID
725	o	4-920-665-01	GUIDE (LARGE), ROLLER
726	s	7-623-212-22	SW5, TYPE2
727	s	7-624-106-04	STOP RING 3, TYPE -E
728	s	7-624-108-04	STOP RING 4, TYPE -E
729	s	7-626-202-31	SPLIT PIN 1x10
* 730	s	7-628-254-05	SCREW +P82.6x5
731	s	7-628-254-10	SCREW +P82.6x6
732	s	7-682-152-01	SCREW +P3x16
733	s	7-682-547-09	SCREW +B3x6
734	s	7-682-646-09	SCREW +P83x5
735	s	7-682-648-09	SCREW +P83x8
736	s	7-682-962-01	SCREW +P8W4x10
737	s	7-683-239-08	SCREW M3x5
738	s	7-688-002-01	W2.6, SMALL
739	s	7-688-003-11	W3, MIDDLE
* 740	s	4-920-690-01	SPRING
* 741	o		SHIELD, CAPSTAN
742	s	2-264-136-00	SUPPORT, PUSH-BUTTON SWITCH
743	o	3-657-845-00	BRACKET, PC BOARD

Note:

The parts marked with an asterisk are changed or newly added ones, compared with those of the units with Serial No. 10900 and before.

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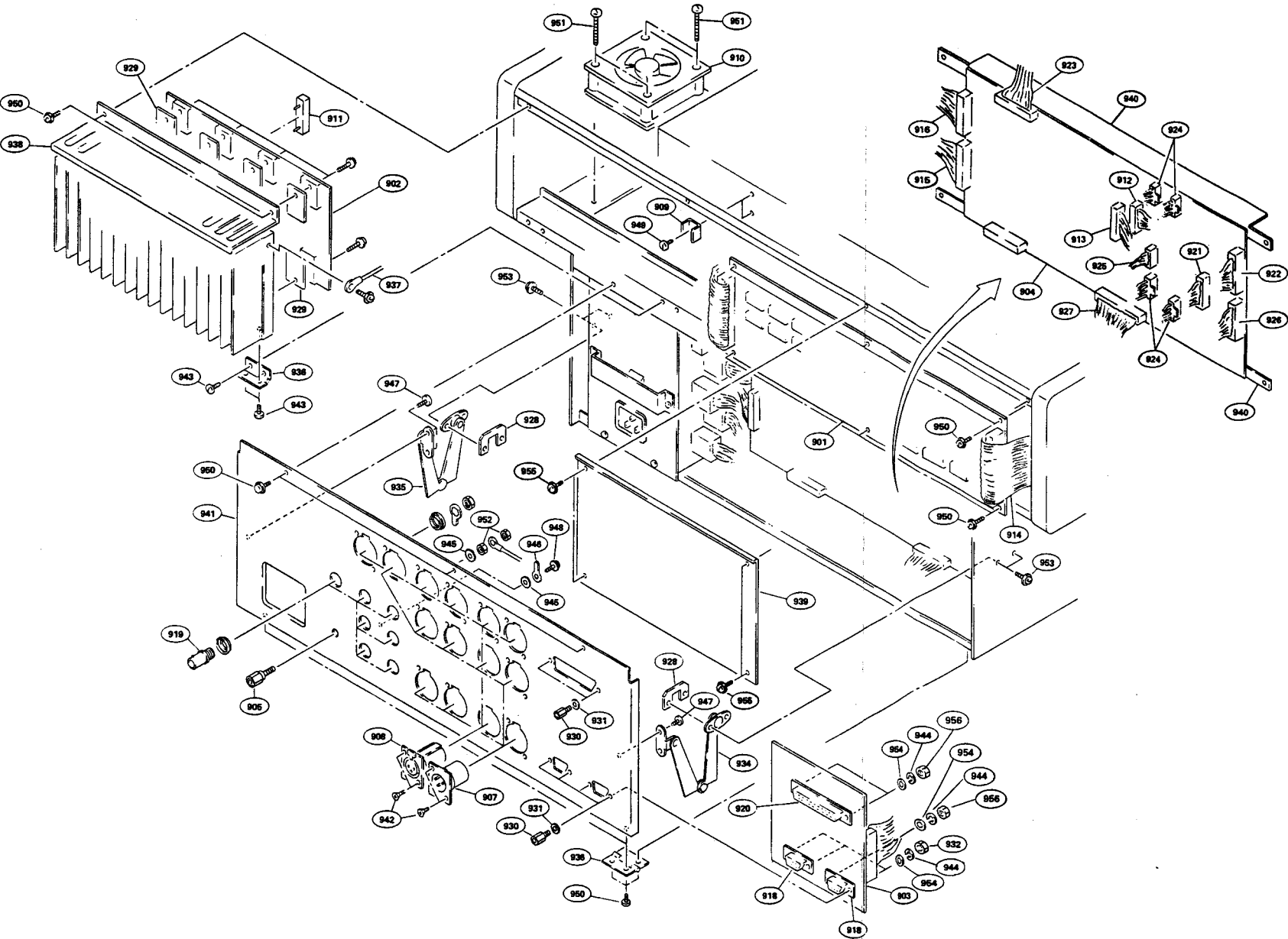


Index No.	SP	Parts No.	Description
801	o	A-7850-489-A	MOUNTED PCB, MA-24
802	o	A-7850-491-A	MOUNTED PCB, DSC-36
803	o	A-7850-492-A	MOUNTED PCB, DSP-13
804	o	A-7850-493-A	COMPLETE PCB, IF-153
805	o	X-4920-529-1	BOX ASSY, MONITOR
806	o	X-4920-534-1	STUD ASSY, MONITOR
807	s	1-237-672-11	RES, VAR, CARBON 500
808	s	1-503-291-00	SPEAKER
809	s	1-553-244-00	SWITCH, TOGGLE
810	s	1-553-249-00	SWITCH, TOGGLE
811	o	1-559-219-11	CABLE ASSY, METER FLAT (2)
812	o	1-559-220-11	CABLE ASSY, METER FLAT (1)
813	o	1-559-230-11	CABLE ASSY, IF FLAT (3)
814	s	1-570-297-11	SWITCH, ROTARY
815	o	1-620-331-11	PC BOARD, MA-25
816	o	1-938-894-11	HARNESS (DIGITAL CONTROL)
817	o	1-938-895-11	HARNESS (MONITOR POWER)
818	o	1-938-896-11	HARNESS (SPEAKER)
819	o	1-938-898-11	HARNESS (TC)
820	o	1-938-902-11	HARNESS (METER, HEADPHONE)
821	o	1-938-903-11	HARNESS (MA-24)
822	o	1-938-904-11	HARNESS (METER CONTROL)
823	o	1-938-915-11	HARNESS (IF, DR POWER)
824	s	2-300-629-00	PLATE, BLIND
825	s	2-300-636-00	CUSHION
826	s	3-659-365-00	SPACER (4x3)
827	o	3-711-283-02	HINGE (B-1100 SERIES)
828	s	4-906-510-01	KNOB (LARGE), ROTARY
829	o	4-920-512-01	SUPPORT (A), VR
830	o	4-920-513-01	SUPPORT, SW
831	o	4-920-514-01	DIFFUSER
832	o	4-920-515-01	GRILLE, SP
833	o	4-920-538-01	SUPPORT, MONITOR PC BOARD
834	o	4-920-565-01	SPONGE, SP
835	o	4-920-566-01	HEAT SINK, SP
836	o	4-920-594-01	NECK, MONITOR
837	o	4-920-606-01	BRACKET, SP
838	o	4-920-618-01	SHEET, METER
839	o	4-920-653-01	MONITOR (REAR)
840	o	4-920-663-01	FRAME, LED POSITIONING (L)
841	o	4-920-664-01	FRAME, LED POSITIONING (S)
842	s	7-682-646-09	SCREW +PS3x5
843	s	7-682-647-09	SCREW +PS3x6
844	s	7-682-947-01	SCREW +PSW3x6
845	s	7-683-418-04	BOLT, HEXAGON SOCKET 4x6
846	s	7-684-023-04	N3, TYPE2
847	s	7-682-961-09	SCREW, +PSW4x8
849	s	4-920-668-01	RUBBER, HINGE

CONNECTOR PANEL

CONNECTOR PANEL

CONNECTOR PANEL



Index			
No.	SP	Parts No.	Description
901	o	A-7850-485-A	MOUNTED PCB, IF-151
902	o	A-7850-486-A	COMPLETE PCB, DR-54
903	o	A-7850-500-A	MOUNTED PCB, IF-152
904	o	A-7850-501-A	MOUNTED PCB, MB-143
905	o	X-4801-204-0	TERMINAL ASSY
906	s	1-413-183-13	SWITCHING REGULATOR
907	s	1-509-176-51	CONNECTOR (RECEPTACLE) 3P
908	s	1-509-184-51	CONNECTOR (RECEPTACLE) 3P
909	o	1-535-421-00	TAB, FASTEN
910	s	1-541-409-31	MOTOR, FAN
911	s	1-548-100-31	TIMER
912	o	1-559-219-11	CABLE ASSY, METER FLAT (2)
913	o	1-559-223-11	CABLE ASSY, IF FLAT (2)
914	o	1-559-227-11	CABLE ASSY, IF FLAT (1)
915	o	1-559-228-11	CABLE ASSY, SYNC REC FLAT
916	o	1-559-229-11	CABLE ASSY, AD REC FLAT
917	o	1-559-232-11	CABLE ASSY, KC FLAT
918	s	1-561-655-00	CONNECTOR SOCKET, MINIATURE 9P
919	s	1-561-781-21	CONNECTOR, BNC (RECEPTACLE)
920	s	1-561-899-00	CONNECTOR SOCKET, MINIATURE 50P
921	o	1-938-902-11	HARNESS (METER HEADPHONE)
922	o	1-938-905-11	HARNESS (ARP HEAD)
923	o	1-938-907-11	HARNESS (DR)
924	o	1-938-913-11	HARNESS (MOTHER POWER)
925	o	1-938-916-11	HARNESS (DDA)
926	o	1-938-917-11	HARNESS (LA I/O)
927	o	1-938-918-11	HARNESS (DIGITAL I/O)
928	o	2-526-728-11	BRACKET, STAY, JACK
929	s	2-832-007-00	BUSHING (K), INSULATING
930	o	3-668-459-11	SCREW, CONNECTOR
931	s	3-683-454-01	WASHER, POLYETHYLENE
932	o	3-686-054-02	STUD, SUPPORT, PC BOARD
934	o	3-711-271-01	STAY (RIGHT)
935	o	3-711-271-11	STAY (LEFT)
936	o	3-711-283-02	HINGE (B-1100 SERIES)
937	o	3-711-289-03	CABLE, RESTRAINT
938	o	4-920-592-01	STOPPER, HEAT SINK
939	o	4-920-598-01	PLATE, REAR
940	o	4-920-626-01	SUPPORT (LOWER), CARD CONNECTOR
941	o	4-920-639-03	PANEL, CONNECTOR
942	s	7-621-259-49	SCREW, +P2.6x6
943	s	7-621-773-95	SCREW, +B 2.6x6
944	s	7-623-207-22	SW 2.6, TYPE 2
945	s	7-623-422-07	LW 3, TYPE B
946	s	7-623-508-01	LUG, 3
947	s	7-682-345-04	SCREW +RK3x4
948	s	7-682-646-09	SCREW +PS3x5
949	s	7-682-661-09	SCREW +PS4x8
950	s	7-682-947-01	SCREW +PSW3x6
951	s	7-682-955-01	SCREW +PSW3x30
952	s	7-684-023-04	N3, TYPE2
953	s	7-682-147-01	SCREW +P 3x6 (S)
954	s	7-688-002-01	W2.6, SMALL
955	s	2-375-131-01	SCREW, +B3x4
956	s	7-622-207-05	N26, TYPE2

D-3. ELECTRICAL PARTS LIST

STANDARDIZED PARTS LIST

Replacements for capacitors and resistors not given in each board parts lists are shown below.

If a capacitor with the desired working voltage is not found, choose one of a higher working voltage.

CERAMIC CAPACITOR

Part No.	SP	Description
1-161-039-00	s	CAP, CERAMIC 0.001 10% 50V
1-161-041-00	s	CAP, CERAMIC 0.0015 10% 50V
1-161-043-00	s	CAP, CERAMIC 0.0022 10% 50V
1-161-045-00	s	CAP, CERAMIC 0.0033 10% 50V
1-161-047-00	s	CAP, CERAMIC 0.0047 10% 50V
1-161-049-00	s	CAP, CERAMIC 0.0068 10% 50V
1-161-051-00	s	CAP, CERAMIC 0.01 10% 50V
1-161-053-00	s	CAP, CERAMIC 0.015 10% 50V
1-161-055-00	s	CAP, CERAMIC 0.022 10% 50V
1-161-057-00	s	CAP, CERAMIC 0.033 10% 50V
1-161-021-11	s	CAP, CERAMIC 0.047 10% 25V
1-161-059-00	s	CAP, CERAMIC 0.047 10% 50V
1-161-061-00	s	CAP, CERAMIC 0.068 10% 50V
1-161-772-11	s	CAP, CERAMIC 0.1 10% 25V
1-161-063-00	s	CAP, CERAMIC 0.1 10% 50V

CARBON RESISTOR

Part No.	SP	Description
1-249-381-11	s	RES, CARBON 1.0 5% 1/4W
1-249-382-11	s	RES, CARBON 1.2 5% 1/4W
1-249-383-11	s	RES, CARBON 1.5 5% 1/4W
1-249-384-11	s	RES, CARBON 1.8 5% 1/4W
1-249-385-11	s	RES, CARBON 2.2 5% 1/4W
1-249-386-11	s	RES, CARBON 2.7 5% 1/4W
1-249-387-11	s	RES, CARBON 3.3 5% 1/4W
1-249-388-11	s	RES, CARBON 3.9 5% 1/4W
1-249-389-11	s	RES, CARBON 4.7 5% 1/4W
1-249-390-11	s	RES, CARBON 5.6 5% 1/4W
1-249-391-11	s	RES, CARBON 6.8 5% 1/4W
1-249-392-11	s	RES, CARBON 8.2 5% 1/4W
1-249-393-11	s	RES, CARBON 10 5% 1/4W
1-249-394-11	s	RES, CARBON 12 5% 1/4W
1-249-395-11	s	RES, CARBON 15 5% 1/4W
1-249-396-11	s	RES, CARBON 18 5% 1/4W
1-249-397-11	s	RES, CARBON 22 5% 1/4W
1-249-398-11	s	RES, CARBON 27 5% 1/4W
1-249-399-11	s	RES, CARBON 33 5% 1/4W
1-249-400-11	s	RES, CARBON 39 5% 1/4W
1-249-401-11	s	RES, CARBON 47 5% 1/4W
1-249-402-11	s	RES, CARBON 56 5% 1/4W
1-249-403-11	s	RES, CARBON 68 5% 1/4W
1-215-394-00	s	RES, METAL 75 1% 1/6W
1-249-404-11	s	RES, CARBON 82 5% 1/4W
1-249-405-11	s	RES, CARBON 100 5% 1/4W
1-249-406-11	s	RES, CARBON 120 5% 1/4W
1-249-407-11	s	RES, CARBON 150 5% 1/4W
1-249-408-11	s	RES, CARBON 180 5% 1/4W
1-249-409-11	s	RES, CARBON 220 5% 1/4W
1-249-410-11	s	RES, CARBON 270 5% 1/4W
1-249-411-11	s	RES, CARBON 330 5% 1/4W
1-249-412-11	s	RES, CARBON 390 5% 1/4W
1-249-413-11	s	RES, CARBON 470 5% 1/4W
1-249-414-11	s	RES, CARBON 560 5% 1/4W
1-249-415-11	s	RES, CARBON 680 5% 1/4W
1-249-416-11	s	RES, CARBON 820 5% 1/6W
1-249-417-11	s	RES, CARBON 1.0k 5% 1/4W
1-249-418-11	s	RES, CARBON 1.2k 5% 1/4W
1-249-419-11	s	RES, CARBON 1.5k 5% 1/4W

(CARBON RESISTOR)

Part No.	SP	Description
1-249-420-11	s	RES, CARBON 1.8k 5% 1/4W
1-249-421-11	s	RES, CARBON 2.2k 5% 1/4W
1-249-422-11	s	RES, CARBON 2.7k 5% 1/4W
1-249-423-11	s	RES, CARBON 3.3k 5% 1/4W
1-249-424-11	s	RES, CARBON 3.9k 5% 1/4W
1-249-425-11	s	RES, CARBON 4.7k 5% 1/4W
1-249-426-11	s	RES, CARBON 5.6k 5% 1/4W
1-249-427-11	s	RES, CARBON 6.8k 5% 1/4W
1-249-428-11	s	RES, CARBON 8.2k 5% 1/4W
1-249-429-11	s	RES, CARBON 10k 5% 1/4W
1-249-430-11	s	RES, CARBON 12k 5% 1/4W
1-249-431-11	s	RES, CARBON 15k 5% 1/4W
1-249-432-11	s	RES, CARBON 18k 5% 1/4W
1-249-433-11	s	RES, CARBON 22k 5% 1/4W
1-249-434-11	s	RES, CARBON 27k 5% 1/4W
1-249-435-11	s	RES, CARBON 33k 5% 1/4W
1-249-436-11	s	RES, CARBON 39k 5% 1/4W
1-249-437-11	s	RES, CARBON 47k 5% 1/4W
1-249-438-11	s	RES, CARBON 56k 5% 1/4W
1-249-439-11	s	RES, CARBON 68k 5% 1/4W
1-249-440-11	s	RES, CARBON 82k 5% 1/4W
1-249-441-11	s	RES, CARBON 100k 5% 1/4W
1-215-471-00	s	RES, METAL 120k 1% 1/6W
1-215-473-00	s	RES, METAL 150k 1% 1/6W
1-215-475-00	s	RES, METAL 180k 1% 1/6W
1-215-477-00	s	RES, METAL 220k 1% 1/6W
1-215-479-00	s	RES, METAL 270k 1% 1/6W
1-215-481-00	s	RES, METAL 330k 1% 1/6W
1-215-483-00	s	RES, METAL 390k 1% 1/6W
1-215-485-00	s	RES, METAL 470k 1% 1/6W
1-215-487-00	s	RES, METAL 560k 1% 1/6W
1-215-489-00	s	RES, METAL 680k 1% 1/6W
1-215-491-00	s	RES, METAL 820k 1% 1/6W
1-215-493-00	s	RES, METAL 1.0M 1% 1/6W

Ref. No.	SP	Parts No.	Description
ARP-1 BOARD (Applicable to ARP-1 Board No. up to 1-620-314-13 only.)			
-	o	A-7850-476-A	COMPLETE PCB, ARP-1 (This assembly includes the following parts.)
-	s	2-251-622-11	LEVER, PC BOARD
-	s	1-561-832-00	SOCKET, SHORT
-	o	4-920-505-01	SHIELD, ARB
C1	s	1-123-330-00	CAP, ELECT 22 20% 25V
C2	s	1-124-477-11	CAP, ELECT 47 20% 25V
C3	s	1-123-382-00	CAP, ELECT 3.3 20% 100V
C4	s	1-123-382-00	CAP, ELECT 3.3 20% 100V
C5	s	1-123-875-91	CAP, ELECT 10 20% 50V
C6	s	1-123-875-91	CAP, ELECT 10 20% 50V
C7	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C8	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C9	s	1-124-038-00	CAP, ELECT 1 20% 50V
C10	s	1-136-156-00	CAP, METAL 0.018 5% 50V
C11	s	1-136-153-00	CAP, METAL 0.01 5% 50V
C12	s	1-124-282-00	CAP, ELECT NONPOLAR 22 20% 25V
C13	s	1-162-179-11	CAP, CERAMIC 0.1 50V
tol6			
C17	s	1-124-282-00	CAP, ELECT NONPOLAR 22 20% 25V
C18	s	1-102-109-00	CAP, CERAMIC 180P 10% 50V
to 21			
C22	s	1-124-282-00	CAP, ELECT NONPOLAR 22 20% 25V
C23	s	1-102-109-00	CAP, CERAMIC 180P 10% 50V
C24	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C25	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C26	s	1-124-282-00	CAP, ELECT NONPOLAR 22 20% 25V
C28	s	1-124-284-00	CAP, ELECT NONPOLAR 10 20% 16V
C29	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C30	s	1-102-106-00	CAP, CERAMIC 100P 10% 50V
C31	s	1-102-106-00	CAP, CERAMIC 100P 10% 50V
C32	s	1-162-179-11	CAP, CERAMIC 0.1 50V
to 39			
C40	s	1-104-077-00	CAP, STYROL 0.001 5% 50V
C41	s	1-103-732-00	CAP, STYROL 0.002 5% 50V
C42	s	1-104-077-00	CAP, STYROL 0.001 5% 50V
C43	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C44	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C45	s	1-123-333-00	CAP, ELECT 100 20% 25V
C46	s	1-123-333-00	CAP, ELECT 100 20% 25V
C47	s	1-123-333-00	CAP, ELECT 100 20% 25V
C48	s	1-162-179-11	CAP, CERAMIC 0.1 50V
to 51			
C52	s	1-123-330-00	CAP, ELECT 22 20% 25V
C53	s	1-123-330-00	CAP, ELECT 22 20% 25V
C101	s	1-124-284-00	CAP, ELECT NONPOLAR 10 20% 16V
C102	s	1-124-284-00	CAP, ELECT NONPOLAR 10 20% 16V
C103	s	1-136-153-00	CAP, METAL 0.01 5% 50V
C104	s	1-136-153-00	CAP, METAL 0.01 5% 50V
C105	s	1-124-284-00	CAP, ELECT NONPOLAR 10 20% 16V
C106	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C107	s	1-162-179-11	CAP, CERAMIC 0.1 50V

Ref. No.	SP	Parts No.	Description
C108	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C109	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C110	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C111	s	1-124-499-11	CAP, ELECT NONPOLAR 1.0 20% 50V
C112	s	1-102-109-00	CAP, CERAMIC 180P 10% 50V
to 115			
C116	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C117	s	1-124-278-00	CAP, ELECT NONPOLAR 10 20% 35V
C118	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C120	s	1-124-499-11	CAP, ELECT NONPOLAR 1 20% 50V
C121	s	1-102-114-00	CAP, CERAMIC 470P 10% 50V
C122	s	1-124-499-11	CAP, ELECT NONPOLAR 1 20% 50V
C123	s	1-136-155-00	CAP, METAL 0.015 5% 50V
C124	s	1-124-286-00	CAP, ELECT NONPOLAR 33 20% 16V
C125	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C126	s	1-136-158-00	CAP, METAL 0.027 5% 50V
C127	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C128	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C129	s	1-102-114-00	CAP, CERAMIC 470P 10% 50V
C130	s	1-124-499-11	CAP, ELECT NONPOLAR 1 20% 50V
C131	s	1-161-048-00	CAP, CERAMIC 5600P 10% 50V
C132	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C133	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C135	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C136	s	1-124-278-00	CAP, ELECT NONPOLAR 10 20% 35V
C137	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C138	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C139	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C140	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
C141	s	1-136-173-00	CAP, METAL 0.47 5% 50V
C142	s	1-136-173-00	CAP, METAL 0.47 5% 50V
C143	s	1-124-477-11	CAP, ELECT 47 20% 25V
to 146			
C147	s	1-124-038-00	CAP, ELECT 1 20% 50V
C148	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
C149	s	1-124-477-11	CAP, ELECT 47 20% 25V
C150	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C151	s	1-106-178-00	CAP, FILM 1800P 5% 100V
C152	s	1-102-111-00	CAP, CERAMIC 270P 10% 50V
C153	s	1-124-477-11	CAP, ELECT 47 20% 25V
C154	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C155	s	1-124-282-00	CAP, ELECT NONPOLAR 22 20% 25V
C156	s	1-102-074-00	CAP, CERAMIC 0.001 10% 50V
C201	s	1-124-284-00	CAP, ELECT NONPOLAR 10 20% 16V
C202	s	1-124-284-00	CAP, ELECT NONPOLAR 10 20% 16V
C203	s	1-136-153-00	CAP, METAL 0.01 5% 50V
C204	s	1-136-153-00	CAP, METAL 0.01 5% 50V
C205	s	1-124-284-00	CAP, ELECT NONPOLAR 10 20% 16V
C206	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C207	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C208	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C209	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C210	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C211	s	1-124-499-11	CAP, ELECT NONPOLAR 1.0 20% 50V

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
C212	s	1-102-109-00	CAP, CERAMIC 180P 10% 50V
C213	s	1-102-109-00	CAP, CERAMIC 180P 10% 50V
C214	s	1-102-109-00	CAP, CERAMIC 180P 10% 50V
C215	s	1-102-109-00	CAP, CERAMIC 180P 10% 50V
C216	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C217	s	1-124-278-00	CAP, ELECT NONPOLAR 10 20% 35V
C218	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C220	s	1-124-499-11	CAP, ELECT NONPOLAR 1.0 20% 50V
C221	s	1-102-114-00	CAP, CERAMIC 470P 10% 50V
C222	s	1-124-499-11	CAP, ELECT NONPOLAR 1.0 20% 50V
C223	s	1-136-155-00	CAP, METAL 0.015 5% 50V
C224	s	1-124-286-00	CAP, ELECT NONPOLAR 33 20% 16V
C225	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C226	s	1-136-158-00	CAP, METAL 0.027 5% 50V
C227	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C228	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C229	s	1-102-114-00	CAP, CERAMIC 470P 10% 50V
C230	s	1-124-499-11	CAP, ELECT NONPOLAR 1.0 20% 50V
C231	s	1-161-048-00	CAP, CERAMIC 560P 10% 50V
C232	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C233	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C235	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C236	s	1-124-278-00	CAP, ELECT NONPOLAR 10 20% 35V
C237	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C238	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C239	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C240	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
C241	s	1-136-173-00	CAP, METAL 0.47 5% 50V
C242	s	1-136-173-00	CAP, METAL 0.47 5% 50V
C243	s	1-124-477-11	CAP, ELECT 47 20% 25V
C244	s	1-124-477-11	CAP, ELECT 47 20% 25V
C245	s	1-124-477-11	CAP, ELECT 47 20% 25V
C246	s	1-124-477-11	CAP, ELECT 47 20% 25V
C247	s	1-124-038-00	CAP, ELECT 1.0 20% 50V
C248	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
C249	s	1-124-477-11	CAP, ELECT 47 20% 25V
C250	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C251	s	1-106-178-00	CAP, FILM 1800P 5% 50V
C252	s	1-102-111-00	CAP, CERAMIC 270P 10% 50V
C253	s	1-124-477-11	CAP, ELECT 47 20% 25V
C254	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C255	s	1-124-282-00	CAP, ELECT NONPOLAR 22 20% 25V
C256	s	1-102-074-00	CAP, CERAMIC 0.001 10% 50V
C301	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C302	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C303	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C304	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C305	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C306	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C307	s	1-124-477-11	CAP, ELECT 47 20% 25V
C308	s	1-124-477-11	CAP, ELECT 47 20% 25V
C401	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C402	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C403	s	1-162-179-11	CAP, CERAMIC 0.1 50V

Ref. No.	SP	Parts No.	Description
C404	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C405	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C406	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C407	s	1-124-477-11	CAP, ELECT 47 20% 25V
C408	s	1-124-477-11	CAP, ELECT 47 20% 25V
C501	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C502	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C504	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C507	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C508	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C509	s	1-124-278-00	CAP, ELECT NONPOLAR 10 20% 35V
C510	s	1-124-477-11	CAP, ELECT 47 20% 25V
C511	s	1-124-477-11	CAP, ELECT 47 20% 25V
C514	s	1-136-173-00	CAP, METAL 0.47 5% 50V
C515	s	1-136-173-00	CAP, METAL 0.47 5% 50V
C516	s	1-124-477-11	CAP, ELECT 47 20% 25V
C517	s	1-124-477-11	CAP, ELECT 47 20% 25V
C518	s	1-124-477-11	CAP, ELECT 47 20% 25V
C519	s	1-124-477-11	CAP, ELECT 47 20% 25V
C601	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C602	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C604	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C607	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C608	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C609	s	1-124-278-00	CAP, ELECT NONPOLAR 10 20% 35V
C610	s	1-124-477-11	CAP, ELECT 47 20% 25V
C611	s	1-124-477-11	CAP, ELECT 47 20% 25V
C614	s	1-136-173-00	CAP, METAL 0.47 5% 50V
C615	s	1-136-173-00	CAP, METAL 0.47 5% 50V
C616	s	1-124-477-11	CAP, ELECT 47 20% 25V
C617	s	1-124-477-11	CAP, ELECT 47 20% 25V
C618	s	1-124-477-11	CAP, ELECT 47 20% 25V
C619	s	1-124-477-11	CAP, ELECT 47 20% 25V
D1 to 12	s	8-719-911-19	DIODE 1SS119
D13	s	8-719-910-75	DIODE HZ7B2L
D14	s	8-719-910-75	DIODE HZ7B2L
D15	s	8-719-924-06	DIODE ERC24-06S
D101 to 116	s	8-719-911-19	DIODE 1SS119
D201 to 216	s	8-719-911-19	DIODE 1SS119
D301 to 306	s	8-719-911-19	DIODE 1SS119
D401 to 406	s	8-719-911-19	DIODE 1SS119
D501 to 507	s	8-719-911-19	DIODE 1SS119
D601 to 607	s	8-719-921-19	DIODE 1SS119TG

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description	Ref. No.	SP	Parts No.	Description
IC1	s	8-759-202-74	IC TC74HC04P	Q111	s	8-729-281-53	TRANSISTOR 2SC1815-GR
IC2	s	8-759-202-74	IC TC74HC04P	Q112	s	8-729-306-92	TRANSISTOR 2SD669A
IC3	s	8-759-974-07	IC SN7407N	Q113	s	8-729-306-92	TRANSISTOR 2SD669A
IC4	s	8-759-974-06	IC SN7406N	Q114	s	8-729-304-92	TRANSISTOR 2SB649
IC5	s	8-759-202-21	IC TC74HC32P	Q201	s	8-729-217-03	TRANSISTOR 2SK170
IC6	s	8-759-202-11	IC TC74HC00P	Q202	s	8-729-200-95	TRANSISTOR 2SJ74
IC7	s	8-759-202-74	IC TC74HC04P	Q203	s	8-729-307-58	TRANSISTOR 2SC1775A
IC8	s	8-759-990-04	IC TL074CN	Q204	s	8-729-307-28	TRANSISTOR 2SA872A-E
IC9	s	8-759-910-83	IC TL072ACP	Q205	s	8-729-307-58	TRANSISTOR 2SC1775A
IC10	s	8-759-700-04	IC NJM2043D-D	Q206	s	8-729-307-28	TRANSISTOR 2SA872A-E
IC11	s	8-759-910-83	IC TL072ACP	Q207	s	8-729-306-92	TRANSISTOR 2SD669A
IC12	s	8-759-990-04	IC TL074CN	Q208	s	8-729-304-92	TRANSISTOR 2SB649
IC13	s	8-759-937-39	IC DG211CJ	Q209	s	8-729-306-92	TRANSISTOR 2SD669A
IC14	s	8-759-700-04	IC NJM2043D-D	Q210	s	8-729-304-92	TRANSISTOR 2SB649
IC101	s	8-759-900-72	IC NE5532P	Q211	s	8-729-281-53	TRANSISTOR 2SC1815-GR
IC102	s	8-759-745-63	IC NJM4560D-X	Q212	s	8-729-306-92	TRANSISTOR 2SD669A
IC103	s	8-759-700-04	IC NJM2043D-D	Q213	s	8-729-306-92	TRANSISTOR 2SD669A
IC104	s	8-759-700-04	IC NJM2043D-D	Q214	s	8-729-304-92	TRANSISTOR 2SB649
IC105	s	8-759-745-63	IC NJM4560D-X	Q301	s	8-729-200-95	TRANSISTOR 2SJ74
IC106	s	8-759-745-63	IC NJM4560D-X	Q302	s	8-729-217-03	TRANSISTOR 2SK170
IC107	s	8-759-905-42	IC NE5534P	Q401	s	8-729-200-95	TRANSISTOR 2SJ74
IC201	s	8-759-900-72	IC NE5532P	Q402	s	8-729-217-03	TRANSISTOR 2SK170
IC202	s	8-759-745-63	IC NJM4560D-X	Q501	s	8-729-200-95	TRANSISTOR 2SJ74
IC203	s	8-759-700-04	IC NJM2043D-D	Q502	s	8-729-217-03	TRANSISTOR 2SK170
IC204	s	8-759-700-04	IC NJM2043D-D	Q503	s	8-729-307-58	TRANSISTOR 2SC1775A
IC205	s	8-759-745-63	IC NJM4560D-X	Q504	s	8-729-307-28	TRANSISTOR 2SA872A-E
IC206	s	8-759-745-63	IC NJM4560D-X	Q505	s	8-729-307-58	TRANSISTOR 2SC1775A
IC207	s	8-759-905-42	IC NE5534P	Q506	s	8-729-307-28	TRANSISTOR 2SA872A-E
IC301	s	8-759-900-72	IC NE5532P	Q507	s	8-729-307-58	TRANSISTOR 2SC1775A
IC302	s	8-759-900-72	IC NE5532P	Q508	s	8-729-307-28	TRANSISTOR 2SA872A-E
IC303	s	8-759-900-72	IC NE5532P	Q509	s	8-729-307-58	TRANSISTOR 2SC1775A
IC401	s	8-759-900-72	IC NE5532P	Q510	s	8-729-307-28	TRANSISTOR 2SA872A-E
IC402	s	8-759-900-72	IC NE5532P	Q511	s	8-729-306-92	TRANSISTOR 2SD669A
IC403	s	8-759-900-72	IC NE5532P	Q512	s	8-729-304-92	TRANSISTOR 2SB649
IC501	s	8-759-900-72	IC NE5532P	Q513	s	8-729-306-92	TRANSISTOR 2SD669A
IC502	s	8-759-900-72	IC NE5532P	Q514	s	8-729-304-92	TRANSISTOR 2SB649
IC503	s	8-759-910-77	IC LF353N/GLEA312	Q601	s	8-729-200-95	TRANSISTOR 2SJ74
IC601	s	8-759-900-72	IC NE5532P	Q602	s	8-729-217-03	TRANSISTOR 2SK170
IC602	s	8-759-900-72	IC NE5532P	Q603	s	8-729-307-58	TRANSISTOR 2SC1775A
IC603	s	8-759-910-77	IC LF353N/GLEA312	Q604	s	8-729-307-28	TRANSISTOR 2SA872A-E
L1	s	1-409-309-00	COIL, SN 72	Q605	s	8-729-307-58	TRANSISTOR 2SC1775A
L2	s	1-409-309-00	COIL, SN 72	Q606	s	8-729-307-28	TRANSISTOR 2SA872A-E
LV101	s	1-407-293-00	VARIABLE INDUCTOR 1.5M	Q607	s	8-729-307-58	TRANSISTOR 2SC1775A
LV201	s	1-407-293-00	VARIABLE INDUCTOR 1.5M	Q608	s	8-729-307-28	TRANSISTOR 2SA872A-E
Q1	s	8-729-122-02	TRANSISTOR 2SA1220A-P	Q609	s	8-729-307-58	TRANSISTOR 2SC1775A
Q2	s	8-729-300-72	TRANSISTOR 2SB647A	Q610	s	8-729-307-28	TRANSISTOR 2SA872A-E
to 7				Q611	s	8-729-306-92	TRANSISTOR 2SD669A
Q8	s	8-729-281-53	TRANSISTOR 2SC1815-GR	Q612	s	8-729-304-92	TRANSISTOR 2SB649
Q9	s	8-729-306-92	TRANSISTOR 2SD669A	Q613	s	8-729-306-92	TRANSISTOR 2SD669A
Q10	s	8-729-200-95	TRANSISTOR 2SJ74	Q614	s	8-729-304-92	TRANSISTOR 2SB649
Q11	s	8-729-200-95	TRANSISTOR 2SJ74	R26	s	1-247-688-11	RES, CARBON 10 5% 1/4W
Q101	s	8-729-217-03	TRANSISTOR 2SK170	R37	s	1-215-444-00	RES, METAL 9.1K 1% 1/6W
Q102	s	8-729-200-95	TRANSISTOR 2SJ74	R39	s	1-215-444-00	RES, METAL 9.1K 1% 1/6W
Q103	s	8-729-307-58	TRANSISTOR 2SC1775A	R40	s	1-215-444-00	RES, METAL 9.1K 1% 1/6W
Q104	s	8-729-307-28	TRANSISTOR 2SA872A-E	R41	s	1-215-444-00	RES, METAL 9.1K 1% 1/6W
Q105	s	8-729-307-58	TRANSISTOR 2SC1775A	R42	s	1-215-444-00	RES, METAL 9.1K 1% 1/6W
Q106	s	8-729-307-28	TRANSISTOR 2SA872A-E	R51	s	1-215-442-00	RES, METAL 7.5K 1% 1/6W
Q107	s	8-729-306-92	TRANSISTOR 2SD669A	R52	s	1-215-448-00	RES, METAL 13K 1% 1/6W
Q108	s	8-729-304-92	TRANSISTOR 2SB649	R53	s	1-215-432-00	RES, METAL 3K 1% 1/6W
Q109	s	8-729-306-92	TRANSISTOR 2SD669A	R54	s	1-215-430-00	RES, METAL 2.4K 1% 1/6W
Q110	s	8-729-304-92	TRANSISTOR 2SB649	R57	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
R60	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R61	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R62	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R63	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R64	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R65	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R66	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R67	s	1-215-421-00	RES, METAL 1K 1% 1/6W
R68	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R69	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R101	s	1-215-462-00	RES, METAL 51K 1% 1/6W
R104	s	1-215-440-00	RES, METAL 6.2K 1% 1/6W
R105	s	1-215-440-00	RES, METAL 6.2K 1% 1/6W
R111	s	1-215-430-00	RES, METAL 2.4K 1% 1/6W
R117	s	1-215-444-00	RES, METAL 9.1K 1% 1/6W
R118	s	1-215-444-00	RES, METAL 9.1K 1% 1/6W
R119	s	1-215-444-00	RES, METAL 9.1K 1% 1/6W
R120	s	1-215-444-00	RES, METAL 9.1K 1% 1/6W
R124	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R125	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R129	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
R134	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R137	s	1-247-881-00	RES, CARBON 120K 5% 1/4W
R138	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R141	s	1-247-838-00	RES, CARBON 2K 5% 1/4W
R143	s	1-215-430-00	RES, METAL 2.4K 1% 1/6W
R149	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R158	s	1-247-689-11	RES, CARBON 12 5% 1/4W
R159	s	1-247-689-11	RES, CARBON 12 5% 1/4W
R160	s	1-215-462-00	RES, METAL 51K 1% 1/6W
R161	s	1-215-462-00	RES, METAL 51K 1% 1/6W
R164	s	1-247-688-11	RES, CARBON 10 5% 1/4W
R165	s	1-215-440-00	RES, METAL 6.2K 1% 1/6W
R166	s	1-215-432-00	RES, METAL 3K 1% 1/6W
R167	s	1-215-432-00	RES, METAL 3K 1% 1/6W
R201	s	1-215-462-00	RES, METAL 51K 1% 1/6W
R204	s	1-215-440-00	RES, METAL 6.2K 1% 1/6W
R205	s	1-215-440-00	RES, METAL 6.2K 1% 1/6W
R211	s	1-215-430-00	RES, METAL 2.4K 1% 1/6W
R217	s	1-215-444-00	RES, METAL 9.1K 1% 1/6W
to 220			
R229	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
R234	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R237	s	1-247-881-00	RES, CARBON 120K 5% 1/4W
R238	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R241	s	1-247-838-00	RES, CARBON 2K 5% 1/4W
R243	s	1-215-430-00	RES, METAL 2.4K 1% 1/6W
R249	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R258	s	1-247-689-11	RES, CARBON 12 5% 1/4W
R259	s	1-247-689-11	RES, CARBON 12 5% 1/4W
R260	s	1-215-462-00	RES, METAL 51K 1% 1/6W
R261	s	1-215-462-00	RES, METAL 51K 1% 1/6W
R264	s	1-247-688-11	RES, CARBON 10 5% 1/4W
R265	s	1-215-440-00	RES, METAL 6.2K 1% 1/6W
R266	s	1-215-432-00	RES, METAL 3K 1% 1/6W
R267	s	1-215-432-00	RES, METAL 3K 1% 1/6W
R301	s	1-215-463-00	RES, METAL 56K 1% 1/6W
R302	s	1-215-463-00	RES, METAL 56K 1% 1/6W
R303	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R304	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R305	s	1-215-433-00	RES, METAL 3.3K 1% 1/6W

Ref. No.	SP	Parts No.	Description
R306	s	1-215-433-00	RES, METAL 3.3K 1% 1/6W
R307	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R308	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R309	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R310	s	1-215-417-00	RES, METAL 680 1% 1/6W
R311	s	1-215-437-00	RES, METAL 4.7K 1% 1/6W
R312	s	1-215-430-00	RES, METAL 2.4K 1% 1/6W
R313	s	1-215-463-00	RES, METAL 56K 1% 1/6W
R314	s	1-215-435-00	RES, METAL 3.9K 1% 1/6W
R315	s	1-215-421-00	RES, METAL 1K 1% 1/6W
R316	s	1-215-421-00	RES, METAL 1K 1% 1/6W
R317	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R318	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R319	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R320	s	1-215-373-31	RES, METAL 10 1% 1/6W
R321	s	1-215-373-31	RES, METAL 10 1% 1/6W
R401	s	1-215-463-00	RES, METAL 56K 1% 1/6W
R402	s	1-215-463-00	RES, METAL 56K 1% 1/6W
R403	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R404	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R405	s	1-215-433-00	RES, METAL 3.3K 1% 1/6W
R406	s	1-215-433-00	RES, METAL 3.3K 1% 1/6W
R407	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R408	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R409	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R410	s	1-215-417-00	RES, METAL 680 1% 1/6W
R411	s	1-215-437-00	RES, METAL 4.7K 1% 1/6W
R412	s	1-215-430-00	RES, METAL 2.4K 1% 1/6W
R413	s	1-215-463-00	RES, METAL 56K 1% 1/6W
R414	s	1-215-435-00	RES, METAL 3.9K 1% 1/6W
R415	s	1-215-421-00	RES, METAL 1K 1% 1/6W
R416	s	1-215-421-00	RES, METAL 1K 1% 1/6W
R417	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R418	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R419	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R420	s	1-215-373-31	RES, METAL 10 1% 1/6W
R421	s	1-215-373-31	RES, METAL 10 1% 1/6W
R501	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R502	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R503	s	1-215-438-00	RES, METAL 5.1K 1% 1/6W
R504	s	1-215-438-00	RES, METAL 5.1K 1% 1/6W
R506	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R509	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R512	s	1-215-430-00	RES, METAL 2.4K 1% 1/6W
R515	s	1-215-461-00	RES, METAL 47K 1% 1/6W
R516	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R517	s	1-215-429-00	RES, METAL 2.2K 1% 1/6W
R518	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R519	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R520	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R522	s	1-215-429-00	RES, METAL 2.2K 1% 1/6W
R523	s	1-215-437-00	RES, METAL 4.7K 1% 1/6W
to 526			
R527	s	1-215-373-31	RES, METAL 10 1% 1/6W
to 530			
R531	s	1-247-689-11	RES, CARBON 12 5% 1/4W
R532	s	1-247-689-11	RES, CARBON 12 5% 1/4W
R533	s	1-215-462-00	RES, METAL 51K 1% 1/6W
R534	s	1-215-462-00	RES, METAL 51K 1% 1/6W
R601	s	1-215-445-00	RES, METAL 10K 1% 1/6W

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
R602	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R603	s	1-215-438-00	RES, METAL 5.1K 1% 1/6W
R604	s	1-215-438-00	RES, METAL 5.1K 1% 1/6W
R606	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R609	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R612	s	1-215-430-00	RES, METAL 2.4K 1% 1/6W
R615	s	1-215-461-00	RES, METAL 47K 1% 1/6W
R616	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R617	s	1-215-429-00	RES, METAL 2.2K 1% 1/6W
R618	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R619	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R620	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R622	s	1-215-429-00	RES, METAL 2.2K 1% 1/6W
R623	s	1-215-437-00	RES, METAL 4.7K 1% 1/6W
to 626			
R627	s	1-215-373-31	RES, METAL 10 1% 1/6W
to 630			
R631	s	1-247-689-11	RES, CARBON 12 5% 1/4W
R632	s	1-247-689-11	RES, CARBON 12 5% 1/4W
R633	s	1-215-462-00	RES, METAL 51K 1% 1/6W
R634	s	1-215-462-00	RES, METAL 51K 1% 1/6W
RB1	s	1-235-005-00	RESISTOR BLOCK 47K
RL1	s	1-515-656-11	RELAY (PLASTIC SEAL)
to 3			
RL101	s	1-515-656-11	RELAY (PLASTIC SEAL)
to 103			
RL202	s	1-515-656-11	RELAY (PLASTIC SEAL)
RL203	s	1-515-656-11	RELAY (PLASTIC SEAL)
RL501	s	1-515-656-11	RELAY (PLASTIC SEAL)
RL601	s	1-515-656-11	RELAY (PLASTIC SEAL)
RV1	s	1-230-843-11	RES, ADJ, METAL 10K
RV2	s	1-230-841-11	RES, ADJ, METAL 2K
RV3	s	1-230-843-11	RES, ADJ, METAL 10K
to 8			
RV101	s	1-230-843-11	RES, ADJ, METAL 10K
to 104			
RV201	s	1-230-843-11	RES, ADJ, METAL 10K
to 204			
RV301	s	1-230-839-11	RES, ADJ, METAL 500
RV302	s	1-228-932-00	RES, ADJ, CERMET 10K
RV401	s	1-230-839-11	RES, ADJ, METAL 500
RV402	s	1-228-932-00	RES, ADJ, CERMET 10K
RV501	s	1-228-932-00	RES, ADJ, CERMET 10K
RV601	s	1-228-932-00	RES, ADJ, CERMET 10K
SW1	s	1-553-441-00	SWITCH, TOGGLE
TH1	s	1-800-202-XX	THERMISTOR S-10K

Ref.
No. SP Parts No. Description

ARP-1 BOARD

(Applicable to ARP-1 Board No. 1-620-314-14 and higher only.)

- o A-7850-476-A COMPLETE PCB, ARP-1
(This assembly includes the following parts.)

-	s	2-251-622-11	LEVER, PC BOARD
-	s	1-561-832-00	SOCKET, SHORT
-	o	4-920-505-01	SHIELD, ARB
-	o	1-565-413-11	RECEPTACLE, CONNECTOR 2P
C1	s	1-123-330-00	CAP, ELECT 22 20% 25V
C2	s	1-124-477-11	CAP, ELECT 47 20% 25V
C3	s	1-123-382-00	CAP, ELECT 3.3 20% 100V
C4	s	1-123-382-00	CAP, ELECT 3.3 20% 100V
C5	s	1-123-875-11	CAP, ELECT 10 20% 50V
C6	s	1-123-875-11	CAP, ELECT 10 20% 50V
C7	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C8	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C9	s	1-124-791-11	CAP, ELECT 1 20% 50V
C10	s	1-136-156-00	CAP, METAL 0.018 5% 50V
C11	s	1-136-153-00	CAP, METAL 0.01 5% 50V
C12	s	1-124-282-00	CAP, ELECT NONPOLAR 22 20% 25V
C13	s	1-162-179-11	CAP, CERAMIC 0.1 50V
tol6			
C17	s	1-124-282-00	CAP, ELECT NONPOLAR 22 20% 25V
C18	s	1-102-109-00	CAP, CERAMIC 180P 10% 50V
to 21			
C22	s	1-124-282-00	CAP, ELECT NONPOLAR 22 20% 25V
C23	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
C24	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C25	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C26	s	1-124-282-00	CAP, ELECT NONPOLAR 22 20% 25V
C27	s	1-161-074-00	CAP, CERAMIC 4700P 5% 25V
C28	s	1-126-320-11	CAP, ELECT NONPOLAR 10 20% 16V
C29	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C30	s	1-109-626-00	CAP, MICA 100P 2% 500V
C31	s	1-109-626-00	CAP, MICA 100P 2% 500V
C32	s	1-162-179-11	CAP, CERAMIC 0.1 50V
to 39			
C40	s	1-104-302-11	CAP, STYROL 0.001 5% 50V
C41	s	1-103-732-00	CAP, STYROL 0.002 5% 50V
C42	s	1-104-302-11	CAP, STYROL 0.001 5% 50V
C43	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C44	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C45	s	1-123-333-00	CAP, ELECT 100 20% 25V
C46	s	1-123-333-00	CAP, ELECT 100 20% 25V
C47	s	1-123-333-00	CAP, ELECT 100 20% 25V
C48	s	1-162-179-11	CAP, CERAMIC 0.1 50V
to 51			
C52	s	1-123-330-00	CAP, ELECT 22 20% 25V
C53	s	1-123-330-00	CAP, ELECT 22 20% 25V
C101	s	1-126-320-11	CAP, ELECT NONPOLAR 10 20% 16V
C102	s	1-126-320-11	CAP, ELECT NONPOLAR 10 20% 16V
C103	s	1-136-153-00	CAP, METAL 0.01 5% 50V
C104	s	1-136-153-00	CAP, METAL 0.01 5% 50V
C105	s	1-126-320-11	CAP, ELECT NONPOLAR 10 20% 16V
C106	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C107	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C108	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description		
C109	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C110	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C111	s	1-124-499-11	CAP, ELECT NONPOLAR	1.0 20% 50V	
C112 to 115	s	1-102-109-00	CAP, CERAMIC 180P	10% 50V	
C116	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C117	s	1-124-006-11	CAP, ELECT NONPOLAR	10 20% 25V	
C118	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C120	s	1-124-499-11	CAP, ELECT NONPOLAR	1 20% 50V	
C121	s	1-102-114-00	CAP, CERAMIC 470P	10% 50V	
C122	s	1-124-499-11	CAP, ELECT NONPOLAR	1 20% 50V	
C123	s	1-136-155-00	CAP, METAL 0.015	5% 50V	
C124	s	1-124-286-00	CAP, ELECT NONPOLAR	33 20% 16V	
C125	s	1-101-888-00	CAP, CERAMIC 68P	5% 50V	
C126	s	1-136-158-00	CAP, METAL 0.027	5% 50V	
C127	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C128	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C129	s	1-102-114-00	CAP, CERAMIC 470P	10% 50V	
C130	s	1-124-499-11	CAP, ELECT NONPOLAR	1 20% 50V	
C131	s	1-161-048-00	CAP, CERAMIC 5600P	10% 50V	
C132	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C133	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C135	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C136	s	1-124-006-11	CAP, ELECT NONPOLAR	10 20% 25V	
C139	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C140	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C141	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C142	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C143 to 145	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C147	s	1-124-791-11	CAP, ELECT 1	20% 50V	
C148	s	1-102-963-00	CAP, CERAMIC 33P	5% 50V	
C149	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C150	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C151	s	1-108-795-11	CAP, MYLAR 1800P	5% 50V	
C152	s	1-102-111-00	CAP, CERAMIC 270P	10% 50V	
C153	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C154	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C155	s	1-124-282-00	CAP, ELECT NONPOLAR	22 20% 25V	
C156	s	1-102-074-00	CAP, CERAMIC 0.001	10% 50V	
C160	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C161	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C162	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C163	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C164	s	1-123-334-00	CAP, ELECT 220	20% 25V	
C165	s	1-123-334-00	CAP, ELECT 220	20% 25V	
C201	s	1-126-320-11	CAP, ELECT NONPOLAR	10 20% 16V	
C202	s	1-126-320-11	CAP, ELECT NONPOLAR	10 20% 16V	
C203	s	1-136-153-00	CAP, METAL 0.01	5% 50V	
C204	s	1-136-153-00	CAP, METAL 0.01	5% 50V	
C205	s	1-126-320-11	CAP, ELECT NONPOLAR	10 20% 16V	
C206	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C207	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C208	s	1-101-888-00	CAP, CERAMIC 68P	5% 50V	
C209	s	1-162-179-11	CAP, CERAMIC 0.1	50V	

Ref. No.	SP	Parts No.	Description		
C210	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C211	s	1-124-499-11	CAP, ELECT NONPOLAR	1.0 20% 50V	
C212	s	1-102-109-00	CAP, CERAMIC 180P	10% 50V	
C213	s	1-102-109-00	CAP, CERAMIC 180P	10% 50V	
C214	s	1-102-109-00	CAP, CERAMIC 180P	10% 50V	
C215	s	1-102-109-00	CAP, CERAMIC 180P	10% 50V	
C216	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C217	s	1-124-006-11	CAP, ELECT NONPOLAR	10 20% 25V	
C218	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C220	s	1-124-499-11	CAP, ELECT NONPOLAR	1.0 20% 50V	
C221	s	1-102-114-00	CAP, CERAMIC 470P	10% 50V	
C222	s	1-124-499-11	CAP, ELECT NONPOLAR	1.0 20% 50V	
C223	s	1-136-155-00	CAP, METAL 0.015	5% 50V	
C224	s	1-124-286-00	CAP, ELECT NONPOLAR	33 20% 16V	
C225	s	1-101-888-00	CAP, CERAMIC 68P	5% 50V	
C226	s	1-136-158-00	CAP, METAL 0.027	5% 50V	
C227	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C228	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C229	s	1-102-114-00	CAP, CERAMIC 470P	10% 50V	
C230	s	1-124-499-11	CAP, ELECT NONPOLAR	1.0 20% 50V	
C231	s	1-161-048-00	CAP, CERAMIC 560P	10% 50V	
C232	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C233	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C235	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C236	s	1-124-006-11	CAP, ELECT NONPOLAR	10 20% 25V	
C237	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C238	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C239	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C240	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C241	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C242	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C243	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C244	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C245	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C247	s	1-124-791-11	CAP, ELECT 1.0	20% 50V	
C248	s	1-102-963-00	CAP, CERAMIC 33P	5% 50V	
C249	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C250	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C251	s	1-108-795-11	CAP, MYLAR 1800P	5% 50V	
C252	s	1-102-111-00	CAP, CERAMIC 270P	10% 50V	
C253	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C254	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C255	s	1-124-282-00	CAP, ELECT NONPOLAR	22 20% 25V	
C256	s	1-102-074-00	CAP, CERAMIC 0.001	10% 50V	
C260	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C261	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C262	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C263	s	1-124-477-11	CAP, ELECT 47	20% 25V	
C264	s	1-123-334-00	CAP, ELECT 220	20% 25V	
C265	s	1-123-334-00	CAP, ELECT 220	20% 25V	
C301	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C302	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C303	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C304	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C305	s	1-101-888-00	CAP, CERAMIC 68P	5% 50V	

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
C306	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C307	s	1-124-477-11	CAP, ELECT 47 20% 25V
C308	s	1-124-477-11	CAP, ELECT 47 20% 25V
C401	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C402	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C403	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C404	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C405	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C406	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C407	s	1-124-477-11	CAP, ELECT 47 20% 25V
C408	s	1-124-477-11	CAP, ELECT 47 20% 25V
C501	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C502	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C504	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C507	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C508	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C509	s	1-124-006-11	CAP, ELECT NONPOLAR 10 20% 25V
C510	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C511	s	1-124-477-11	CAP, ELECT 47 20% 25V
C512	s	1-124-477-11	CAP, ELECT 47 20% 25V
C513	s	1-124-477-11	CAP, ELECT 47 20% 25V
C514	s	1-124-477-11	CAP, ELECT 47 20% 25V
C515	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C516	s	1-124-477-11	CAP, ELECT 47 20% 25V
C517	s	1-124-477-11	CAP, ELECT 47 20% 25V
C518	s	1-124-477-11	CAP, ELECT 47 20% 25V
C519	s	1-124-477-11	CAP, ELECT 47 20% 25V
C520	s	1-124-477-11	CAP, ELECT 47 20% 25V
C521	s	1-124-477-11	CAP, ELECT 47 20% 25V
C524	s	1-124-477-11	CAP, ELECT 47 20% 25V
C522	s	1-123-334-00	CAP, ELECT 220 20% 25V
C523	s	1-123-334-00	CAP, ELECT 220 20% 25V
C601	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C602	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C604	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C607	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C608	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C609	s	1-124-006-11	CAP, ELECT NONPOLAR 10 20% 25V
C610	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C611	s	1-124-477-11	CAP, ELECT 47 20% 25V
C612	s	1-124-477-11	CAP, ELECT 47 20% 25V
C613	s	1-124-477-11	CAP, ELECT 47 20% 25V
C614	s	1-124-477-11	CAP, ELECT 47 20% 25V
C615	s	1-136-179-11	CAP, CERAMIC 0.1 50V
C616	s	1-124-477-11	CAP, ELECT 47 20% 25V
C617	s	1-124-477-11	CAP, ELECT 47 20% 25V
C618	s	1-124-477-11	CAP, ELECT 47 20% 25V
C619	s	1-124-477-11	CAP, ELECT 47 20% 25V
C620	s	1-124-477-11	CAP, ELECT 47 20% 25V
C621	s	1-124-477-11	CAP, ELECT 47 20% 25V
C624	s	1-124-477-11	CAP, ELECT 47 20% 25V
C622	s	1-123-334-00	CAP, ELECT 220 20% 25V
C623	s	1-123-334-00	CAP, ELECT 220 20% 25V
D1 to 12	s	8-719-911-19	DIODE 1SS119
D13	s	8-719-910-75	DIODE HZ7B2L
D14	s	8-719-910-75	DIODE HZ7B2L
D15	s	8-719-925-06	DIODE ERC25-06S
D101 to 107	s	8-719-911-19	DIODE 1SS119
D108 to 111	s	8-719-906-52	DIODE HZ15-2

Ref. No.	SP	Parts No.	Description
D112 to 116	s	8-719-911-19	DIODE 1SS119
D201 to 207	s	8-719-911-19	DIODE 1SS119
D208 to 211	s	8-719-906-52	DIODE HZ15-2
D212 to 216	s	8-719-911-19	DIODE 1SS119
D301 to 306	s	8-719-911-19	DIODE 1SS119
D401 to 406	s	8-719-911-19	DIODE 1SS119
D501 to 507	s	8-719-911-19	DIODE 1SS119
D508 to 511	s	8-719-906-52	DIODE HZ15-2
D601 to 607	s	8-719-921-19	DIODE 1SS119TG
D609 to 611	s	8-719-906-52	DIODE HZ15-2
IC1	s	8-759-202-74	IC TC74HC04P
IC2	s	8-759-202-74	IC TC74HC04P
IC3	s	8-759-974-07	IC SN7407N
IC4	s	8-759-974-06	IC SN7406N
IC5	s	8-759-202-21	IC TC74HC32P
IC6	s	8-759-202-11	IC TC74HC00P
IC7	s	8-759-202-74	IC TC74HC04P
IC8	s	8-759-990-04	IC TL074CN
IC9	s	8-759-910-83	IC TL072ACP
IC10	s	8-759-981-57	IC RC2043DD
IC11	s	8-759-910-83	IC TL072ACP
IC12	s	8-759-990-04	IC TL074CN
IC13	s	8-759-937-39	IC DG211CJ
IC14	s	8-759-981-57	IC RC2043DD
IC101	s	8-759-900-72	IC NE5532P
IC102	s	8-759-745-63	IC NJM4560D-X
IC103	s	8-759-981-57	IC RC2043DD
IC104	s	8-759-981-57	IC RC2043DD
IC105	s	8-759-745-63	IC NJM4560D-X
IC106	s	8-749-901-29	IC BX-1481
IC107	s	8-759-905-42	IC NE5534P
IC201	s	8-759-900-72	IC NE5532P
IC202	s	8-759-745-63	IC NJM4560D-X
IC203	s	8-759-981-57	IC RC2043DD
IC204	s	8-759-981-57	IC RC2043DD
IC205	s	8-759-745-63	IC NJM4560D-X
IC206	s	8-749-901-29	IC BX-1481
IC207	s	8-759-905-42	IC NE5534P
IC301	s	8-759-900-72	IC NE5532P
IC302	s	8-759-900-72	IC NE5532P
IC303	s	8-759-900-72	IC NE5532P
IC401	s	8-759-900-72	IC NE5532P
IC402	s	8-759-900-72	IC NE5532P
IC403	s	8-759-900-72	IC NE5532P
IC501	s	8-759-900-72	IC NE5532P
IC502	s	8-759-900-72	IC NE5532P
IC503	s	8-749-901-29	IC BX-1481
IC601	s	8-759-900-72	IC NE5532P
IC602	s	8-759-900-72	IC NE5532P
IC603	s	8-749-901-29	IC BX-1481

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
J21	s	1-566-385-11	PIN, CONNECTOR 2P
J22	s	1-566-385-11	PIN, CONNECTOR 2P
J23	s	1-566-385-11	PIN, CONNECTOR 2P
J101	s	1-566-385-11	PIN, CONNECTOR 2P
J102	s	1-566-385-11	PIN, CONNECTOR 2P
J103	s	1-566-385-11	PIN, CONNECTOR 2P
J104	s	1-566-385-11	PIN, CONNECTOR 2P
J201	s	1-566-385-11	PIN, CONNECTOR 2P
J202	s	1-566-385-11	PIN, CONNECTOR 2P
L1	s	1-409-309-00	COIL, SN 72
L2	s	1-409-309-00	COIL, SN 72
LV101	s	1-407-293-00	VARIABLE INDUCTOR 1.5M
LV201	s	1-407-293-00	VARIABLE INDUCTOR 1.5M
Q1	s	8-729-122-03	TRANSISTOR 2SA1220A-P
Q2	s	8-729-300-72	TRANSISTOR 2SB647A
to 7			
Q8	s	8-729-281-53	TRANSISTOR 2SC1815-GR
Q9	s	8-729-306-92	TRANSISTOR 2SD669A
Q10	s	8-729-200-95	TRANSISTOR 2SJ74
Q11	s	8-729-200-95	TRANSISTOR 2SJ74
Q101	s	8-729-217-04	TRANSISTOR 2SK170-V
Q102	s	8-729-200-95	TRANSISTOR 2SJ74
Q107	s	8-729-306-92	TRANSISTOR 2SD669A
Q108	s	8-729-304-92	TRANSISTOR 2SB649
Q109	s	8-729-306-92	TRANSISTOR 2SD669A
Q110	s	8-729-304-92	TRANSISTOR 2SB649
Q111	s	8-729-281-53	TRANSISTOR 2SC1815-GR
Q112	s	8-729-306-92	TRANSISTOR 2SD669A
Q113	s	8-729-306-92	TRANSISTOR 2SD669A
Q114	s	8-729-304-92	TRANSISTOR 2SB649
Q201	s	8-729-217-04	TRANSISTOR 2SK170-V
Q202	s	8-729-200-95	TRANSISTOR 2SJ74
Q207	s	8-729-306-92	TRANSISTOR 2SD669A
Q208	s	8-729-304-92	TRANSISTOR 2SB649
Q209	s	8-729-306-92	TRANSISTOR 2SD669A
Q210	s	8-729-304-92	TRANSISTOR 2SB649
Q211	s	8-729-281-53	TRANSISTOR 2SC1815-GR
Q212	s	8-729-306-92	TRANSISTOR 2SD669A
Q213	s	8-729-306-92	TRANSISTOR 2SD669A
Q214	s	8-729-304-92	TRANSISTOR 2SB649
Q301	s	8-729-200-95	TRANSISTOR 2SJ74
Q302	s	8-729-217-04	TRANSISTOR 2SK170-V
Q401	s	8-729-200-95	TRANSISTOR 2SJ74
Q402	s	8-729-217-04	TRANSISTOR 2SK170-V
Q501	s	8-729-200-95	TRANSISTOR 2SJ74
Q502	s	8-729-217-04	TRANSISTOR 2SK170-V
Q511	s	8-729-306-92	TRANSISTOR 2SD669A
Q512	s	8-729-304-92	TRANSISTOR 2SB649
Q513	s	8-729-306-92	TRANSISTOR 2SD669A
Q514	s	8-729-304-92	TRANSISTOR 2SB649
Q601	s	8-729-200-95	TRANSISTOR 2SJ74
Q602	s	8-729-217-04	TRANSISTOR 2SK170-V
Q611	s	8-729-306-92	TRANSISTOR 2SD669A
Q612	s	8-729-304-92	TRANSISTOR 2SB649
Q613	s	8-729-306-92	TRANSISTOR 2SD669A
Q614	s	8-729-304-92	TRANSISTOR 2SB649
R2	s	1-247-889-00	RES, CARBON 270K 5% 1/4W
R26	s	1-247-688-11	RES, CARBON 10 5% 1/4W
R37	s	1-247-854-11	RES, CARBON 9.1K 5% 1/4W
R39	s	1-247-854-11	RES, CARBON 9.1K 5% 1/4W
R40	s	1-247-854-11	RES, CARBON 9.1K 5% 1/4W

Ref. No.	SP	Parts No.	Description
R41	s	1-247-854-11	RES, CARBON 9.1K 5% 1/4W
R42	s	1-247-854-11	RES, CARBON 9.1K 5% 1/4W
R47	s	1-247-903-00	RES, CARBON 1M 5% 1/4W
R51	s	1-247-852-11	RES, CARBON 7.5K 5% 1/4W
R52	s	1-247-858-11	RES, CARBON 13K 5% 1/4W
R53	s	1-247-842-11	RES, CARBON 3K 5% 1/4W
R54	s	1-247-840-00	RES, CARBON 2.4K 5% 1/4W
R57	s	1-249-426-11	RES, CARBON 5.6K 5% 1/4W
R60	s	1-247-862-11	RES, CARBON 20K 5% 1/4W
R61	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R62	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R63	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R64	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R65	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R66	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R67	s	1-215-421-00	RES, METAL 1K 1% 1/6W
R68	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R69	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R101	s	1-247-872-11	RES, CARBON 51K 5% 1/4W
R104	s	1-247-850-11	RES, CARBON 6.2K 5% 1/4W
R105	s	1-247-850-11	RES, CARBON 6.2K 5% 1/4W
R111	s	1-247-840-00	RES, CARBON 2.4K 5% 1/6W
R117	s	1-247-854-11	RES, CARBON 9.1K 5% 1/4W
R118	s	1-247-854-11	RES, CARBON 9.1K 5% 1/4W
R119	s	1-247-854-11	RES, CARBON 9.1K 5% 1/4W
R120	s	1-247-854-11	RES, CARBON 9.1K 5% 1/4W
R124	s	1-247-862-11	RES, CARBON 20K 5% 1/4W
R125	s	1-247-862-11	RES, CARBON 20K 5% 1/4W
R128	s	1-247-903-00	RES, CARBON 1M 5% 1/4W
R129	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
R137	s	1-247-881-00	RES, CARBON 120K 5% 1/4W
R138	s	1-247-862-11	RES, CARBON 20K 5% 1/4W
R141	s	1-247-838-00	RES, CARBON 2K 5% 1/4W
R143	s	1-247-840-00	RES, CARBON 2.4K 1% 1/6W
R147	s	1-247-862-00	RES, CARBON 20K 5% 1/4W
R149	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R158	s	1-247-689-11	RES, CARBON 12 5% 1/4W
R159	s	1-247-689-11	RES, CARBON 12 5% 1/4W
R164	s	1-247-688-11	RES, CARBON 10 5% 1/4W
R165	s	1-247-850-11	RES, CARBON 6.2K 5% 1/4W
R166	s	1-247-842-11	RES, CARBON 3K 5% 1/6W
R167	s	1-247-842-11	RES, CARBON 3K 5% 1/6W
R201	s	1-247-872-11	RES, CARBON 51K 5% 1/4W
R204	s	1-247-850-11	RES, CARBON 6.2K 5% 1/4W
R205	s	1-247-850-11	RES, CARBON 6.2K 5% 1/4W
R211	s	1-247-840-00	RES, CARBON 2.4K 5% 1/6W
R217	s	1-247-854-11	RES, CARBON 9.1K 5% 1/4W
to 220			
R228	s	1-247-903-00	RES, CARBON 1M 5% 1/4W
R229	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
R237	s	1-247-881-00	RES, CARBON 120K 5% 1/4W
R238	s	1-247-862-11	RES, CARBON 20K 5% 1/4W
R241	s	1-247-838-00	RES, CARBON 2K 5% 1/4W
R243	s	1-247-840-00	RES, CARBON 2.4K 5% 1/6W
R247	s	1-247-862-00	RES, CARBON 20K 5% 1/4W
R249	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R258	s	1-247-689-11	RES, CARBON 12 5% 1/4W
R259	s	1-247-689-11	RES, CARBON 12 5% 1/4W
R264	s	1-247-688-11	RES, CARBON 10 5% 1/4W
R265	s	1-247-850-11	RES, CARBON 6.2K 5% 1/6W
R266	s	1-247-842-11	RES, CARBON 3K 5% 1/6W
R267	s	1-247-842-11	RES, CARBON 3K 5% 1/6W
R301	s	1-215-463-00	RES, METAL 56K 1% 1/6W
R302	s	1-215-463-00	RES, METAL 56K 1% 1/6W
R303	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
R304	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R305	s	1-215-433-00	RES, METAL 3.3K 1% 1/6W
R306	s	1-215-433-00	RES, METAL 3.3K 1% 1/6W
R307	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R308	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R309	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R310	s	1-215-417-00	RES, METAL 680 1% 1/6W
R311	s	1-215-437-00	RES, METAL 4.7K 1% 1/6W
R312	s	1-215-430-00	RES, METAL 2.4K 1% 1/6W
R313	s	1-215-463-00	RES, METAL 56K 1% 1/6W
R314	s	1-215-435-00	RES, METAL 3.9K 1% 1/6W
R315	s	1-215-421-00	RES, METAL 1K 1% 1/6W
R316	s	1-215-421-00	RES, METAL 1K 1% 1/6W
R317	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R318	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R319	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R320	s	1-215-373-31	RES, METAL 10 1% 1/6W
R321	s	1-215-373-31	RES, METAL 10 1% 1/6W
R401	s	1-215-463-00	RES, METAL 56K 1% 1/6W
R402	s	1-215-463-00	RES, METAL 56K 1% 1/6W
R403	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R404	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R405	s	1-215-433-00	RES, METAL 3.3K 1% 1/6W
R406	s	1-215-433-00	RES, METAL 3.3K 1% 1/6W
R407	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R408	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R409	s	1-215-439-00	RES, METAL 5.6K 1% 1/6W
R410	s	1-215-417-00	RES, METAL 680 1% 1/6W
R411	s	1-215-437-00	RES, METAL 4.7K 1% 1/6W
R412	s	1-215-430-00	RES, METAL 2.4K 1% 1/6W
R413	s	1-215-463-00	RES, METAL 56K 1% 1/6W
R414	s	1-215-435-00	RES, METAL 3.9K 1% 1/6W
R415	s	1-215-421-00	RES, METAL 1K 1% 1/6W
R416	s	1-215-421-00	RES, METAL 1K 1% 1/6W
R417	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R418	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R419	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R420	s	1-215-373-31	RES, METAL 10 1% 1/6W
R421	s	1-215-373-31	RES, METAL 10 1% 1/6W
R501	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R502	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R503	s	1-215-438-00	RES, METAL 5.1K 1% 1/6W
R504	s	1-215-438-00	RES, METAL 5.1K 1% 1/6W
R506	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R509	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R512	s	1-215-430-00	RES, METAL 2.4K 1% 1/6W
R515	s	1-215-461-00	RES, METAL 47K 1% 1/6W
R516	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R517	s	1-215-373-31	RES, METAL 10 1% 1/6W
R518	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R519	s	1-215-451-00	RES, METAL 18K 1% 1/6W
R520	s	1-215-377-51	RES, METAL 15K 1% 1/6W
R521	s	1-215-377-51	RES, METAL 15K 1% 1/6W
R522	s	1-215-437-00	RES, METAL 4.7K 1% 1/6W
to 525			
R526	s	1-215-373-31	RES, METAL 10 1% 1/6W
to 529			
R530	s	1-215-377-51	RES, METAL 15 1% 1/6W
R531	s	1-215-377-51	RES, METAL 15 1% 1/6W
R532	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R533	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R534	s	1-215-469-00	RES, METAL 100K 1% 1/6W

Ref. No.	SP	Parts No.	Description
R535	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R601	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R602	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R603	s	1-215-438-00	RES, METAL 5.1K 1% 1/6W
R604	s	1-215-438-00	RES, METAL 5.1K 1% 1/6W
R606	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R609	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R612	s	1-215-430-00	RES, METAL 2.4K 1% 1/6W
R615	s	1-215-461-00	RES, METAL 47K 1% 1/6W
R616	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R617	s	1-215-373-31	RES, METAL 10 1% 1/6W
R618	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R619	s	1-215-451-00	RES, METAL 18K 1% 1/6W
R620	s	1-215-377-51	RES, METAL 15 1% 1/6W
R622	s	1-215-437-00	RES, METAL 4.7K 1% 1/6W
to 625			
R626	s	1-215-373-31	RES, METAL 10 1% 1/6W
to 629			
R621	s	1-215-377-51	RES, METAL 15 1% 1/6W
R630	s	1-215-377-51	RES, METAL 15 1% 1/6W
R631	s	1-215-377-51	RES, METAL 15 1% 1/6W
R632	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R633	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R634	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R635	s	1-215-469-00	RES, METAL 100K 1% 1/6W
RB1	s	1-235-005-00	RESISTOR BLOCK 47K
RL1	s	1-515-656-11	RELAY (PLASTIC SEAL)
to 3			
RL101	s	1-515-656-11	RELAY (PLASTIC SEAL)
to 103			
RL201	s	1-515-656-11	RELAY (PLASTIC SEAL)
RL202	s	1-515-656-11	RELAY (PLASTIC SEAL)
RL203	s	1-515-656-11	RELAY (PLASTIC SEAL)
RL501	s	1-515-656-11	RELAY (PLASTIC SEAL)
RL601	s	1-515-656-11	RELAY (PLASTIC SEAL)
RV1	s	1-237-518-21	RES, ADJ, METAL 10K
RV2	s	1-237-516-21	RES, ADJ, METAL 2K
RV3	s	1-237-518-21	RES, ADJ, METAL 10K
to 6			
RV7	s	1-237-519-21	RES, ADJ, METAL 20K
RV8	s	1-237-519-21	RES, ADJ, METAL 20K
RV9	s	1-237-521-21	RES, ADJ, METAL 100K
RV101	s	1-237-518-21	RES, ADJ, METAL 10K
to 104			
RV201	s	1-237-518-21	RES, ADJ, METAL 10K
to 204			
RV301	s	1-237-514-21	RES, ADJ, CERMET 500
RV302	s	1-228-932-00	RES, ADJ, CERMET 10K
RV401	s	1-237-514-21	RES, ADJ, CERMET 500
RV402	s	1-228-932-00	RES, ADJ, CERMET 10K
RV501	s	1-228-932-00	RES, ADJ, CERMET 10K
RV601	s	1-228-932-00	RES, ADJ, CERMET 10K
SW1	s	1-553-441-00	SWITCH, TOGGLE
TH1	s	1-800-202-XX	THERMISTOR S-10K

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
CPU-34 BOARD			
-	o	A-7850-505-A	COMPLETE PCB, CPU-34 (This assembly includes the following parts.)
-	o	3-621-124-00	SPACER
C2	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C3	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C7	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 25			
C26	s	1-102-107-00	CAP, CERAMIC 120P 10% 50V
C27	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 29			
C30	s	1-131-353-00	CAP, TANT 10 20% 35V
C31	s	1-102-820-00	CAP, CERAMIC 330P 5% 50V
C32	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
C33	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 36			
C37	s	1-125-445-11	CAP, DOUBLE LAYERS 0.22 5.5V
C38	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 45			
C46	s	1-102-107-00	CAP, CERAMIC 120P 10% 50V
C47	s	1-102-107-00	CAP, CERAMIC 120P 10% 50V
C48	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C49	s	1-124-471-00	CAP, ELECT 1000 20% 6.3V
C50	s	1-124-471-00	CAP, ELECT 1000 20% 6.3V
CN907	o	1-560-359-00	CONNECTOR POST HEADER, 1LG (5P)
D4	s	8-719-949-33	DIODE FC53M-4
D5	s	8-719-911-19	DIODE 1S8119
ICA1	s	8-759-203-64	IC TC74HC4020P
ICA2	s	8-759-202-26	IC TC74HC138P
ICA3	s	8-759-937-43	IC Z8002APS
ICA4	s	8-759-202-21	IC TC74HC32P
ICA5	s	8-759-202-11	IC TC74HC00P
ICA6	s	8-759-744-02	IC PCM3402CPUA6V2.0
ICA7	s	8-759-202-26	IC TC74HC138P
ICA8	s	8-759-001-42	IC MC74HC174N
ICB1	s	8-759-000-99	IC MC74HC74N
ICB2	s	8-759-203-33	IC TC74HC367P
ICB4	s	8-759-202-15	IC TC74HC10P
ICB5	s	8-759-000-99	IC MC74HC74N
ICB7	s	8-759-202-26	IC TC74HC138P
ICB8	s	8-759-202-55	IC TC74HC244P
ICC1	s	8-759-202-11	IC TC74HC00P
ICC2	s	8-759-203-40	IC TC74HC393P
ICC3	s	8-759-995-14	IC AM9513DC
ICC4	s	8-759-202-11	IC TC74HC00P
ICC5	s	8-759-202-74	IC TC74HC04P
ICC6	s	8-759-300-63	IC HM6264LP-15
ICC7	s	8-759-202-86	IC TC74HC123P
ICC8	s	8-759-202-55	IC TC74HC244P
ICD1	s	8-759-202-24	IC TC74HC86P
ICD2	s	8-759-220-04	IC TC40H004P
ICD3	s	8-759-937-46	IC Z8030APS
ICD4	s	8-759-107-52	IC CXQ71054P
ICD6	s	8-759-300-63	IC HM6264LP-15
ICD7	s	8-759-203-48	IC TC74HC573P
ICD8	s	8-759-202-56	IC TC74HC245P

Ref. No.	SP	Parts No.	Description
ICE7	s	8-759-203-48	IC TC74HC573P
ICE8	s	8-759-202-56	IC TC74HC245P
ICF3	s	8-759-937-44	IC Z8036APS
ICF4	s	8-759-107-52	IC CXQ71054P
ICF6	s	8-759-744-03	IC PCM3402CPUF6V2.0
ICF7	s	8-759-202-86	IC TC74HC123P
ICF8	s	8-759-202-55	IC TC74HC244P
L1	s	1-409-309-00	COIL, SN 72UH
Q1	s	8-729-281-53	TRANSISTOR 2SC1815-GR
Q2	s	8-729-201-53	TRANSISTOR 2SA1015-GR
R20	s	1-214-971-00	RES, METAL 2.0M 1% 1/4W
RB1	s	1-231-549-11	RESISTOR BLOCK 47K \times 4
RB2	s	1-235-005-00	RESISTOR BLOCK 47K
RB3	s	1-235-005-00	RESISTOR BLOCK 47K
RB4	s	1-235-005-00	RESISTOR BLOCK 47K
RB5	s	1-235-005-00	RESISTOR BLOCK 47K
X1	s	1-567-930-11	VIBRATOR, LITHIUM TANTALATE

CTL-1 BOARD

(Applicable to CTL-1 Board No. 1-620-310-11 and -12 only.)

-	o	A-7850-468-A	COMPLETE PCB, CTL-1 (This assembly includes the following parts.)
-	s	2-251-622-00	LEVER, PC BOARD
C1	s	1-123-333-00	CAP, ELECT 100 20% 25V
C2	s	1-123-333-00	CAP, ELECT 100 20% 25V
C4	s	1-136-161-00	CAP, METALIZED FILM 0.047 μ F 5% 50V
C6	s	1-136-169-00	CAP, METAL 0.22 5% 50V
C7	s	1-123-333-00	CAP, ELECT 100 20% 25V
C9	s	1-161-900-11	CAP, CERAMIC 1.0 50V
C10	s	1-123-330-00	CAP, ELECT 22 20% 25V
to 16			
D2	s	8-719-921-20	DIODE 1S8119TD
to 4			
D5	s	8-719-812-41	DIODE TL124
D6	s	8-719-812-42	DIODE TLY124
D7	s	8-719-812-41	DIODE TL124
D8	s	8-719-812-43	DIODE TLG124A
D9	s	8-719-812-44	DIODE TLO124
D10	s	8-719-812-42	DIODE TLY124
D11	s	8-719-812-43	DIODE TLG124A
to 14			
D15	s	8-719-812-42	DIODE TLY124
D16	s	8-719-812-44	DIODE TLO124
ICA1	s	8-759-990-04	IC TL074CN
ICA3	s	8-759-202-74	IC TC74HC04P
ICA6	s	8-759-203-30	IC TC74HC365P
ICA7	s	8-759-202-26	IC TC74HC138P
ICA8	s	8-759-202-26	IC TC74HC138P
ICA9	s	8-759-203-30	IC TC74HC365P
ICA10	s	8-759-202-86	IC TC74HC123P
ICA11	s	8-759-913-17	IC CX23021
ICB2	s	8-759-990-04	IC TL074CN
ICB4	s	8-759-776-56	IC MB7114L-CTL-B4
ICB5	s	8-759-203-35	IC TC74HC373P
ICB6	s	8-759-203-35	IC TC74HC373P
ICB7	s	8-759-203-36	IC TC74HC374P

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
ICB8	s	8-759-203-36	IC TC74HC374P
ICB9	s	8-759-203-35	IC TC74HC373P
ICB10	s	8-759-916-98	IC SN74HC377N
ICB11	s	8-759-916-98	IC SN74HC377N
ICC6	s	8-759-916-99	IC SN74HC378N
ICC7	s	8-759-203-30	IC TC74HC365P
ICC8	s	8-759-202-32	IC TC74HC163P
ICC9	s	8-759-776-57	IC MB7114L-CTL-C9
ICC10	s	8-759-203-01	IC TC74HC175P
ICC11	s	8-759-203-39	IC TC74HC390P
ICD1	s	8-759-922-23	IC PCM53JP-V
ICD3	s	8-759-922-23	IC PCM53JP-V
ICD5	s	8-759-202-32	IC TC74HC163P
ICD6	s	8-759-776-58	IC MB7114L-CTL-D6
ICD7	s	8-759-202-32	IC TC74HC163P
ICD8	s	8-759-776-33	IC TBP28L42N-CTL-D8
ICD9	s	8-759-916-98	IC SN74HC377N
ICD10	s	8-759-001-39	IC MC74HC164N
ICD11	s	8-759-203-61	IC TC74HC688P
ICE1	s	8-759-776-59	IC MB7114L-CTL-E1
ICE2	s	8-759-776-60	IC MB7114L-CTL-E2
ICE3	s	8-759-776-61	IC MB7114L-CTL-E3
ICE4	s	8-759-776-62	IC MB7114L-CTL-E4
ICE6	s	8-759-916-99	IC SN74HC378N
ICE7	s	8-759-202-32	IC TC74HC163P
ICE8	s	8-759-202-98	IC TC74HC166P
ICE9	s	8-759-913-17	IC CX23021
ICE10	s	8-759-202-11	IC TC74HC00P
ICE11	s	8-759-202-84	IC TC74HC109P
ICF1	s	8-759-776-63	IC MB7114L-CTL-F1
ICF2	s	8-759-776-64	IC MB7114L-CTL-F2
ICF3	s	8-759-776-65	IC MB7114L-CTL-F3
ICF4	s	8-759-776-66	IC MB7114L-CTL-F4
ICF5	s	8-759-202-21	IC TC74HC32P
ICF6	s	8-759-916-99	IC SN74HC378N
ICF7	s	8-759-202-32	IC TC74HC163P
ICF8	s	8-759-202-14	IC TC74HC08P
ICF9	s	8-759-202-24	IC TC74HC86P
ICF10	s	8-759-202-14	IC TC74HC08P
ICF11	s	8-759-202-21	IC TC74HC32P
ICH1	s	8-759-916-99	IC SN74HC378N
ICH2	s	8-759-916-99	IC SN74HC378N
ICH3	s	8-759-776-67	IC MB7114L-CTL-H3
ICH4	s	8-759-202-74	IC TC74HC04P
ICH5	s	8-759-202-32	IC TC74HC163P
ICH6	s	8-759-202-32	IC TC74HC163P
ICH7	s	8-759-202-11	IC TC74HC00P
ICH8	s	8-759-001-42	IC MC74HC174N
ICH9	s	8-759-203-01	IC TC74HC175P
ICH10	s	8-759-202-74	IC TC74HC04P
ICH11	s	8-759-202-32	IC TC74HC163P
ICJ1	s	8-759-202-32	IC TC74HC163P
ICJ2	s	8-759-202-32	IC TC74HC163P
ICJ3	s	8-759-202-32	IC TC74HC163P
ICJ4	s	8-759-001-42	IC MC74HC174N
ICJ5	s	8-759-916-98	IC SN74HC377N
ICJ6	s	8-759-916-98	IC SN74HC377N
ICJ7	s	8-759-202-32	IC TC74HC163P
ICJ8	s	8-759-916-98	IC SN74HC377N
ICJ9	s	8-759-202-11	IC TC74HC00P
ICJ10	s	8-759-916-98	IC SN74HC377N
ICJ11	s	8-759-202-18	IC TC74HC20P

Ref. No.	SP	Parts No.	Description
ICK1	s	8-759-916-99	IC SN74HC378N
ICK2	s	8-759-916-99	IC SN74HC378N
ICK3	s	8-759-202-27	IC TC74HC157P
ICK4	s	8-759-202-21	IC TC74HC32P
ICK5	s	8-759-202-32	IC TC74HC163P
to 11			
ICL1	s	8-759-202-32	IC TC74HC163P
to 11			
ICM1	s	8-759-776-68	IC MB7114L-CTL-M1
ICM2	s	8-759-202-84	IC TC74HC109P
ICM3	s	8-759-203-01	IC TC74HC175P
ICM4	s	8-759-202-11	IC TC74HC00P
ICM5	s	8-759-202-98	IC TC74HC166P
ICM6	s	8-759-202-98	IC TC74HC166P
ICM7	s	8-759-203-61	IC TC74HC688P
ICM8	s	8-759-202-98	IC TC74HC166P
ICM9	s	8-759-203-61	IC TC74HC688P
ICM10	s	8-759-202-98	IC TC74HC166P
ICM11	s	8-759-203-61	IC TC74HC688P
ICN1	s	8-759-202-32	IC TC74HC163P
ICN2	s	8-759-202-32	IC TC74HC163P
ICN3	s	8-759-202-26	IC TC74HC138P
ICN4	s	8-759-203-61	IC TC74HC688P
ICN5	s	8-759-203-24	IC TC74HC283P
to 11			
Q1	s	8-729-200-95	TRANSISTOR 2SJ74
Q2	s	8-729-281-52	TRANSISTOR 2SC1815-Y
Q3	s	8-729-200-95	TRANSISTOR 2SJ74
Q4	s	8-729-200-95	TRANSISTOR 2SJ74
R1	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R28	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
R29	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
R34	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
RB1	s	1-235-005-00	RESISTOR BLOCK 47K
to 3			
RB4	s	1-231-399-00	RESISTOR BLOCK 330
RB5	s	1-231-399-00	RESISTOR BLOCK 330
RV1	s	1-230-843-11	RES, ADJ, METAL 10K
RV2	s	1-230-845-11	RES, ADJ, METAL 50K
RV3	s	1-230-846-11	RES, ADJ, METAL 100K
SW1	s	1-554-329-00	SWITCH, TOGGLE

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref.
No. SP Parts No. Description

CTL-1 BOARD
(Applicable to CTL-1 Board No. 1-620-310-13 and higher only.)

- o A-7850-468-B COMPLETE PCB, CTL-1
(This assembly includes the following parts.)

- s 2-251-622-11 LEVER, PC BOARD

1-123-333-00 CAP, ELECT 100 20% 25V
C2 s 1-123-333-00 CAP, ELECT 100 20% 25V
C3 s 1-136-153-00 CAP, METAL 0.01 5% 50V
C4 s 1-136-165-00 CAP, METAL 0.1 5% 50V
C5 s 1-136-177-00 CAP, METAL 1 5% 50V

C7 s 1-123-333-00 CAP, ELECT 100 20% 25V
C9 s 1-161-900-11 CAP, CERAMIC 1.0 50V
C10 s 1-123-330-00 CAP, ELECT 22 20% 25V
to 16

D1 s 8-719-911-19 DIODE 1SS119
D2 s 8-719-911-19 DIODE 1SS119
to 4

D5 s 8-719-812-41 DIODE TLR124
D6 s 8-719-812-42 DIODE TLY124
D7 s 8-719-812-41 DIODE TLR124

D8 s 8-719-812-43 DIODE TLG124A
D9 s 8-719-812-44 DIODE TLO124
D10 s 8-719-812-42 DIODE TLY124
D11 s 8-719-812-43 DIODE TLG124A
to 14

D15 s 8-719-812-42 DIODE TLY124
D16 s 8-719-812-44 DIODE TLO124
D17 s 8-719-911-19 DIODE 1SS119

ICA1 s 8-759-990-04 IC TL074CN
ICA3 s 8-759-990-04 IC TL074CN
ICA6 s 8-759-203-30 IC TC74HC365P
ICA7 s 8-759-202-26 IC TC74HC138P
ICA8 s 8-759-202-26 IC TC74HC138P

ICA9 s 8-759-203-30 IC TC74HC365P
ICA10 s 8-759-202-86 IC TC74HC123P
ICA11 s 8-759-913-17 IC CX23021

ICB2 s 8-759-990-04 IC TL074CN
ICB4 s 8-759-776-56 IC MB7114L-CTL-B4
ICB5 s 8-759-203-35 IC TC74HC373P
ICB6 s 8-759-203-35 IC TC74HC373P
ICB7 s 8-759-203-36 IC TC74HC374P

ICB8 s 8-759-203-36 IC TC74HC374P
ICB9 s 8-759-203-35 IC TC74HC373P
ICB10 s 8-759-916-98 IC SN74HC377N
ICB11 s 8-759-916-98 IC SN74HC377N

ICC5 s 8-759-202-74 IC TC74HC04P
ICC6 s 8-759-916-99 IC SN74HC378N
ICC7 s 8-759-203-30 IC TC74HC365P
ICC8 s 8-759-202-32 IC TC74HC163P
ICC9 s 8-759-776-57 IC MB7114L-CTL-C9

ICC10 s 8-759-203-01 IC TC74HC175P
ICC11 s 8-759-203-39 IC TC74HC390P

Ref.
No. SP Parts No. Description

ICD1 s 8-759-922-23 IC PCM53JP-V
ICD3 s 8-759-922-23 IC PCM53JP-V
ICD5 s 8-759-202-32 IC TC74HC163P
ICD6 s 8-759-776-58 IC MB7114L-CTL-D6
ICD7 s 8-759-202-32 IC TC74HC163P

ICD8 s 8-759-776-33 IC TBP28L42N-CTL-D8
ICD9 s 8-759-916-98 IC SN74HC377N
ICD10 s 8-759-001-39 IC MC74HC164N
ICD11 s 8-759-203-61 IC TC74HC688P

ICE1 s 8-759-776-59 IC MB7114L-CTL-E1
ICE2 s 8-759-776-60 IC MB7114L-CTL-E2
ICE3 s 8-759-776-61 IC MB7114L-CTL-E3
ICE4 s 8-759-776-62 IC MB7114L-CTL-E4
ICE6 s 8-759-916-99 IC SN74HC378N

ICE7 s 8-759-202-32 IC TC74HC163P
ICE8 s 8-759-202-98 IC TC74HC166P
ICE9 s 8-759-913-17 IC CX23021
ICE10 s 8-759-202-11 IC TC74HC00P
ICE11 s 8-759-202-84 IC TC74HC109P

ICF1 s 8-759-776-63 IC MB7114L-CTL-F1
ICF2 s 8-759-776-64 IC MB7114L-CTL-F2
ICF3 s 8-759-776-65 IC MB7114L-CTL-F3
ICF4 s 8-759-776-66 IC MB7114L-CTL-F4
ICF5 s 8-759-202-21 IC TC74HC32P

ICF6 s 8-759-916-99 IC SN74HC378N
ICF7 s 8-759-202-32 IC TC74HC163P
ICF8 s 8-759-202-14 IC TC74HC08P
ICF9 s 8-759-202-24 IC TC74HC86P
ICF10 s 8-759-202-14 IC TC74HC08P
ICF11 s 8-759-202-21 IC TC74HC32P

ICH1 s 8-759-916-99 IC SN74HC378N
ICH2 s 8-759-916-99 IC SN74HC378N
ICH3 s 8-759-776-67 IC MB7114L-CTL-H3
ICH4 s 8-759-202-74 IC TC74HC04P
ICH5 s 8-759-202-32 IC TC74HC163P

ICH6 s 8-759-202-32 IC TC74HC163P
ICH7 s 8-759-202-11 IC TC74HC00P
ICH8 s 8-759-001-42 IC MC74HC174N
ICH9 s 8-759-203-01 IC TC74HC175P
ICH10 s 8-759-202-74 IC TC74HC04P
ICH11 s 8-759-202-32 IC TC74HC163P

ICJ1 s 8-759-202-32 IC TC74HC163P
ICJ2 s 8-759-202-32 IC TC74HC163P
ICJ3 s 8-759-202-32 IC TC74HC163P
ICJ4 s 8-759-001-42 IC MC74HC174N
ICJ5 s 8-759-916-98 IC SN74HC377N

ICJ6 s 8-759-916-98 IC SN74HC377N
ICJ7 s 8-759-202-32 IC TC74HC163P
ICJ8 s 8-759-916-98 IC SN74HC377N
ICJ9 s 8-759-202-11 IC TC74HC00P
ICJ10 s 8-759-916-98 IC SN74HC377N
ICJ11 s 8-759-202-18 IC TC74HC20P

ICK1 s 8-759-916-99 IC SN74HC378N
ICK2 s 8-759-916-99 IC SN74HC378N
ICK3 s 8-759-202-27 IC TC74HC157P
ICK4 s 8-759-202-21 IC TC74HC32P
ICK5 s 8-759-202-32 IC TC74HC163P
to 11

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
ICL1 to 11	s	8-759-202-32	IC TC74HC163P
ICM1	s	8-759-776-68	IC MB7114L-CTL-M1
ICM2	s	8-759-202-84	IC TC74HC109P
ICM3	s	8-759-203-01	IC TC74HC175P
ICM4	s	8-759-202-11	IC TC74HC00P
ICM5	s	8-759-202-98	IC TC74HC166P
ICM6	s	8-759-202-98	IC TC74HC166P
ICM7	s	8-759-203-61	IC TC74HC688P
ICM8	s	8-759-202-98	IC TC74HC166P
ICM9	s	8-759-203-61	IC TC74HC688P
ICM10	s	8-759-202-98	IC TC74HC166P
ICM11	s	8-759-203-61	IC TC74HC688P
ICN1	s	8-759-202-32	IC TC74HC163P
ICN2	s	8-759-202-32	IC TC74HC163P
ICN3	s	8-759-202-26	IC TC74HC138P
ICN4	s	8-759-203-61	IC TC74HC688P
ICN5 to 11	s	8-759-203-24	IC TC74HC283P
Q1 to 4	s	8-729-200-95	TRANSISTOR 2SJ74
R2	s	1-247-881-00	RES, CARBON 120K 5% 1/4W
R7	s	1-247-862-11	RES, CARBON 20K 5% 1/4W
R28	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
R29	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
R34	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
RB1 to 3	s	1-235-005-00	RESISTOR BLOCK 47K
RB4	s	1-231-399-00	RESISTOR BLOCK 330
RB5	s	1-231-399-00	RESISTOR BLOCK 330
RV1	s	1-237-518-21	RES, ADJ, CERMET 10K
RV2	s	1-237-521-21	RES, ADJ, CERMET 100K
RV3	s	1-237-521-21	RES, ADJ, CERMET 100K
RV4	s	1-237-518-21	RES, ADJ, CERMET 10K
SW1	s	1-554-329-00	SWITCH, TOGGLE

NOTE : please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref.No. No.	SP	Parts No.	Description
DAD-1 BOARD			
-	o	A-7850-474-A	COMPLETE PCB, DAD-1 (This assembly includes the following parts.)
-	o	1-561-971-00	SOCKET (SINGLE INLINE) 20P
-	s	2-251-622-00	LEVER, PC BOARD
-	o	3-621-124-00	SPACER
-	o	4-920-502-01	SHIELD, ADA
-	s	7-682-647-09	SCREW +PSW 3x6
-	s	7-684-023-04	N3, TYPE 2
AFL101	s	8-830-503-01	H-IC (BH-106)
AFL201	s	8-830-503-01	H-IC (BH-106)
AFL301	s	1-236-002-11	FILTER, LOW PASS (ACTIVE)
AFL401	s	1-236-002-11	FILTER, LOW PASS (ACTIVE)
C1	s	1-123-333-00	CAP, ELECT 100 20% 25V
C2	s	1-162-179-11	CAP, CERAMIC 0.1 50V
to 30			
C31	s	1-123-333-00	CAP, ELECT 100 20% 25V
C32	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C33	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C34	s	1-123-333-00	CAP, ELECT 100 20% 25V
C35	s	1-123-333-00	CAP, ELECT 100 20% 25V
C36	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C37	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C38	s	1-123-333-00	CAP, ELECT 100 20% 25V
to 48			
C45	s	1-123-333-00	CAP, ELECT 100 20% 25V
C46	s	1-123-333-00	CAP, ELECT 100 20% 25V
C47	s	1-123-333-00	CAP, ELECT 100 20% 25V
C48	s	1-123-333-00	CAP, ELECT 100 20% 25V
C101	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C102	s	1-123-333-00	CAP, ELECT 100 20% 25V
C103	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C104	s	1-123-333-00	CAP, ELECT 100 20% 25V
C105	s	1-130-479-00	CAP, FILM 4700P 5% 50V
C106	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C107	s	1-123-333-00	CAP, ELECT 100 20% 25V
C108	s	1-101-880-00	CAP, CERAMIC 47P 5% 50V
C109	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C110	s	1-123-333-00	CAP, ELECT 100 20% 25V
C111	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C112	s	1-123-333-00	CAP, ELECT 100 20% 25V
C113	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C114	s	1-123-333-00	CAP, ELECT 100 20% 25V
C115	s	1-101-880-00	CAP, CERAMIC 47P 5% 50V
C117	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C118	s	1-123-333-00	CAP, ELECT 100 20% 25V
C119	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C120	s	1-123-333-00	CAP, ELECT 100 20% 25V
C121	s	1-104-233-00	CAP, STYROL 220P 5% 125V
C122	s	1-102-959-00	CAP, CERAMIC 22P 5% 50V
C123	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C124	s	1-123-332-00	CAP, ELECT 47 20% 25V
C125	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C126	s	1-123-332-00	CAP, ELECT 47 20% 25V
C127	s	1-124-631-11	CAP, ELECT NONPOLAR 47 20% 16V

Ref. No.	SP	Parts No.	Description
C128	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C129	s	1-123-332-00	CAP, ELECT 47 20% 25V
C130	s	1-136-170-00	CAP, METAL 0.27 5% 50V
C131	s	1-136-170-00	CAP, METAL 0.27 5% 50V
C132	s	1-123-332-00	CAP, ELECT 47 20% 25V
C133	s	1-123-332-00	CAP, ELECT 47 20% 25V
C134	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C135	s	1-102-959-00	CAP, CERAMIC 22P 5% 50V
C201	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C202	s	1-123-333-00	CAP, ELECT 100 20% 25V
C203	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C204	s	1-123-333-00	CAP, ELECT 100 20% 25V
C205	s	1-130-479-00	CAP, FILM 4700P 5% 50V
C206	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C207	s	1-123-333-00	CAP, ELECT 100 20% 25V
C208	s	1-101-880-00	CAP, CERAMIC 47P 5% 50V
C209	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C210	s	1-123-333-00	CAP, ELECT 100 20% 25V
C211	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C212	s	1-123-333-00	CAP, ELECT 100 20% 25V
C213	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C214	s	1-123-333-00	CAP, ELECT 100 20% 25V
C215	s	1-101-880-00	CAP, CERAMIC 47P 5% 50V
C217	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C218	s	1-123-333-00	CAP, ELECT 100 20% 25V
C219	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C220	s	1-123-333-00	CAP, ELECT 100 20% 25V
C221	s	1-104-233-00	CAP, STYROL 220P 5% 125V
C222	s	1-102-959-00	CAP, CERAMIC 22P 5% 50V
C223	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C224	s	1-123-332-00	CAP, ELECT 47 20% 25V
C225	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C226	s	1-123-332-00	CAP, ELECT 47 20% 25V
C227	s	1-124-631-11	CAP, ELECT NONPOLAR 47 20% 16V
C228	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C229	s	1-123-332-00	CAP, ELECT 47 20% 25V
C230	s	1-136-170-00	CAP, METAL 0.27 5% 50V
C231	s	1-136-170-00	CAP, METAL 0.27 5% 50V
C232	s	1-123-332-00	CAP, ELECT 47 20% 25V
C233	s	1-123-332-00	CAP, ELECT 47 20% 25V
C234	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C235	s	1-102-959-00	CAP, CERAMIC 22P 5% 50V
C301	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C302	s	1-123-333-00	CAP, ELECT 100 20% 25V
C303	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C304	s	1-123-333-00	CAP, ELECT 100 20% 25V
C305	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C306	s	1-123-332-00	CAP, ELECT 47 20% 25V
C307	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C308	s	1-123-332-00	CAP, ELECT 47 20% 25V
C309	s	1-130-479-00	CAP, FILM 4700P 5% 50V
C310	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C311	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C312	s	1-123-333-00	CAP, ELECT 100 20% 25V

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description		
C313	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C314	s	1-123-333-00	CAP, ELECT 100	20%	25V
C315	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C316	s	1-123-332-00	CAP, ELECT 47	20%	25V
C317	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C318	s	1-123-332-00	CAP, ELECT 47	20%	25V
C319	s	1-102-959-00	CAP, CERAMIC 22P	5%	50V
C320	s	1-101-880-00	CAP, CERAMIC 47P	5%	50V
C321	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C322	s	1-123-333-00	CAP, ELECT 100	20%	25V
C323	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C324	s	1-123-333-00	CAP, ELECT 100	20%	25V
C325	s	1-104-232-00	CAP, STYROL 150P	5%	125V
C326	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C327	s	1-123-332-00	CAP, ELECT 47	20%	25V
C328	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C329	s	1-123-332-00	CAP, ELECT 47	20%	25V
C330	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C331	s	1-123-333-00	CAP, ELECT 100	20%	25V
C332	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C333	s	1-123-333-00	CAP, ELECT 100	20%	25V
C401	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C402	s	1-123-333-00	CAP, ELECT 100	20%	25V
C403	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C404	s	1-123-333-00	CAP, ELECT 100	20%	25V
C405	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C406	s	1-123-332-00	CAP, ELECT 47	20%	25V
C407	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C408	s	1-123-332-00	CAP, ELECT 47	20%	25V
C409	s	1-130-479-00	CAP, FILM 4700P	5%	50V
C410	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C411	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C412	s	1-123-333-00	CAP, ELECT 100	20%	25V
C413	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C414	s	1-123-333-00	CAP, ELECT 100	20%	25V
C415	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C416	s	1-123-332-00	CAP, ELECT 47	20%	25V
C417	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C418	s	1-123-332-00	CAP, ELECT 47	20%	25V
C419	s	1-102-959-00	CAP, CERAMIC 22P	5%	50V
C420	s	1-101-880-00	CAP, CERAMIC 47P	5%	50V
C421	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C422	s	1-123-333-00	CAP, ELECT 100	20%	25V
C423	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C424	s	1-123-333-00	CAP, ELECT 100	20%	25V
C425	s	1-104-232-00	CAP, STYROL 150P	5%	125V
C426	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C427	s	1-123-332-00	CAP, ELECT 47	20%	25V
C428	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C429	s	1-123-332-00	CAP, ELECT 47	20%	25V
C430	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C431	s	1-123-333-00	CAP, ELECT 100	20%	25V
C432	s	1-162-179-11	CAP, CERAMIC 0.1	50V	
C433	s	1-123-333-00	CAP, ELECT 100	20%	25V

Ref. No.	SP	Parts No.	Description
D1	s	8-719-812-43	DIODE TLG124A
D2	s	8-719-812-43	DIODE TLG124A
IC101	s	8-759-905-34	IC NE5534AN
IC102	s	8-759-900-72	IC NE5532P
IC103	s	8-759-900-72	IC NE5532P
IC104	s	8-759-938-47	IC HAL-5320-5
IC105	s	8-759-933-91	IC PCM75KG
IC201	s	8-759-905-34	IC NE5534AN
IC202	s	8-759-900-72	IC NE5532P
IC203	s	8-759-900-72	IC NE5532P
IC204	s	8-759-938-47	IC HAL-5320-5
IC205	s	8-759-933-91	IC PCM75KG
IC301	s	8-759-900-72	IC NE5532P
IC302	s	8-759-900-72	IC NE5532P
IC303	s	8-759-905-34	IC NE5534AN
IC304	s	8-759-925-04	IC LF356N
IC305	s	8-759-040-53	IC MC14053BCP
IC306	s	8-759-942-43	IC PCM56P-K
IC401	s	8-759-900-72	IC NE5532P
IC402	s	8-759-900-72	IC NE5532P
IC403	s	8-759-905-34	IC NE5534AN
IC404	s	8-759-925-04	IC LF356N
IC405	s	8-759-040-53	IC MC14053BCP
IC406	s	8-759-942-43	IC PCM56P-K
ICA2	s	8-759-921-03	IC CXD1027P
ICA4	s	8-759-001-16	IC MC10116L
ICA5	s	8-759-202-98	IC TC74HC166P
ICA7	s	8-759-203-52	IC TC74HC595P
ICA8	s	8-759-202-74	IC TC74HC04P
ICA10	s	8-759-000-99	IC MC74HC74N
ICA11	s	8-759-000-99	IC MC74HC74N
ICA12	s	8-759-000-99	IC MC74HC74N
ICB4	s	8-759-926-32	IC AM26LS32PC
ICB5	s	8-759-202-98	IC TC74HC166P
ICB7	s	8-759-203-52	IC TC74HC595P
ICB8	s	8-759-921-03	IC CXD1027P
ICB11	s	8-759-202-14	IC TC74HC08P
ICB12	s	8-759-202-11	IC TC74HC00P
ICB13	s	8-759-202-74	IC TC74HC04P
ICC2	s	8-759-912-53	IC CX23034
ICC8	s	8-759-001-42	IC MC74HC174N
ICC9	s	8-759-001-42	IC MC74HC174N
ICC10	s	8-759-778-68	IC TBP28L42N-DAD-C10
ICC11	s	8-759-001-38	IC MC74HC163N
ICC12	s	8-759-001-38	IC MC74HC163N
ICC13	s	8-759-004-63	IC MC74HC125N
ICD2	s	8-759-700-51	IC NJM7850A
ICD4	s	8-759-700-28	IC NJM7905A
ICD5	s	8-759-202-98	IC TC74HC166P
ICD7	s	8-759-202-98	IC TC74HC166P
ICD9	s	8-759-202-98	IC TC74HC166P
ICD11	s	8-759-202-98	IC TC74HC166P

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
L1	s	1-409-309-00	COIL, SN 72
L2	s	1-409-309-00	COIL, SN 72
L3	s	1-409-339-00	COIL, SN
L101	s	1-535-178-00	RES, FERRITE
L201	s	1-535-178-00	RES, FERRITE
Q101	s	8-729-800-44	TRANSISTOR 2SK152-4
Q102	s	8-729-993-72	TRANSISTOR 2SA937
Q201	s	8-729-800-44	TRANSISTOR 2SK152-4
Q202	s	8-729-993-72	TRANSISTOR 2SA937
Q301	s	8-729-800-44	TRANSISTOR 2SK152-4
Q302	s	8-729-993-72	TRANSISTOR 2SA937
Q401	s	8-729-800-44	TRANSISTOR 2SK152-4
Q402	s	8-729-993-72	TRANSISTOR 2SA937
R101	s	1-214-760-00	RES, METAL 20K 1% 1/4W
R102	s	1-214-760-00	RES, METAL 20K 1% 1/4W
R103	s	1-214-753-00	RES, METAL 10K 1% 1/4W
R104	s	1-214-753-00	RES, METAL 10K 1% 1/4W
R105	s	1-214-736-00	RES, METAL 2K 1% 1/4W
R106	s	1-214-761-00	RES, METAL 22K 1% 1/4W
R107	s	1-214-757-00	RES, METAL 15K 1% 1/4W
R108	s	1-214-757-00	RES, METAL 15K 1% 1/4W
R109	s	1-214-740-00	RES, METAL 3K 1% 1/4W
R110	s	1-214-712-00	RES, METAL 200 1% 1/4W
R111	s	1-214-762-00	RES, METAL 24K 1% 1/4W
R112	s	1-214-753-00	RES, METAL 10K 1% 1/4W
R113	s	1-215-431-00	RES, METAL 2.7K 1% 1/6W
R114	s	1-215-432-00	RES, METAL 3K 1% 1/6W
R115	s	1-215-413-00	RES, METAL 470 1% 1/6W
R116	s	1-214-746-00	RES, METAL 5.1K 1% 1/4W
R117	s	1-214-762-00	RES, METAL 24K 1% 1/4W
R118	s	1-214-762-00	RES, METAL 24K 1% 1/4W
R119	s	1-214-971-00	RES, METAL 2M 1% 1/4W
R201	s	1-214-760-00	RES, METAL 20K 1% 1/4W
R202	s	1-214-760-00	RES, METAL 20K 1% 1/4W
R203	s	1-214-753-00	RES, METAL 10K 1% 1/4W
R204	s	1-214-753-00	RES, METAL 10K 1% 1/4W
R205	s	1-214-736-00	RES, METAL 2K 1% 1/4W
R206	s	1-214-761-00	RES, METAL 22K 1% 1/4W
R207	s	1-214-757-00	RES, METAL 15K 1% 1/4W
R208	s	1-214-757-00	RES, METAL 15K 1% 1/4W
R209	s	1-214-740-00	RES, METAL 3K 1% 1/4W
R210	s	1-214-712-00	RES, METAL 200 1% 1/4W
R211	s	1-214-762-00	RES, METAL 24K 1% 1/4W
R212	s	1-214-753-00	RES, METAL 10K 1% 1/4W
R213	s	1-215-431-00	RES, METAL 2.7K 1% 1/6W
R214	s	1-215-432-00	RES, METAL 3K 1% 1/6W
R215	s	1-215-413-00	RES, METAL 470 1% 1/6W
R216	s	1-214-746-00	RES, METAL 5.1K 1% 1/4W

Ref. No.	SP	Parts No.	Description
R217	s	1-214-762-00	RES, METAL 24K 1% 1/4W
R218	s	1-214-762-00	RES, METAL 24K 1% 1/4W
R219	s	1-214-971-00	RES, METAL 2M 1% 1/4W
R301	s	1-214-681-00	RES, METAL 10 1% 1/4W
R302	s	1-214-681-00	RES, METAL 10 1% 1/4W
R303	s	1-214-753-00	RES, METAL 10K 1% 1/4W
R304	s	1-214-753-00	RES, METAL 10K 1% 1/4W
R305	s	1-214-760-00	RES, METAL 20K 1% 1/4W
R306	s	1-214-757-00	RES, METAL 15K 1% 1/4W
R307	s	1-214-757-00	RES, METAL 15K 1% 1/4W
R308	s	1-214-712-00	RES, METAL 200 1% 1/4W
R309	s	1-214-740-00	RES, METAL 3K 1% 1/4W
R310	s	1-214-971-00	RES, METAL 2M 1% 1/4W
R311	s	1-214-757-00	RES, METAL 15K 1% 1/4W
R312	s	1-214-757-00	RES, METAL 15K 1% 1/4W
R313	s	1-215-431-00	RES, METAL 2.7K 1% 1/6W
R314	s	1-215-432-00	RES, METAL 3K 1% 1/6W
R315	s	1-215-421-00	RES, METAL 1K 1% 1/6W
R316	s	1-214-757-00	RES, METAL 15K 1% 1/4W
R317	s	1-214-761-00	RES, METAL 22K 1% 1/4W
R318	s	1-214-741-00	RES, METAL 3.3K 1% 1/4W
R319	s	1-214-745-00	RES, METAL 4.7K 1% 1/4W
R320	s	1-214-969-00	RES, METAL 1.6M 1% 1/4W
R401	s	1-214-681-00	RES, METAL 10 1% 1/4W
R402	s	1-214-681-00	RES, METAL 10 1% 1/4W
R403	s	1-214-753-00	RES, METAL 10K 1% 1/4W
R404	s	1-214-753-00	RES, METAL 10K 1% 1/4W
R405	s	1-214-760-00	RES, METAL 20K 1% 1/4W
R406	s	1-214-757-00	RES, METAL 15K 1% 1/4W
R407	s	1-214-757-00	RES, METAL 15K 1% 1/4W
R408	s	1-214-712-00	RES, METAL 200 1% 1/4W
R409	s	1-214-740-00	RES, METAL 3K 1% 1/4W
R410	s	1-214-971-00	RES, METAL 2M 1% 1/4W
R411	s	1-214-757-00	RES, METAL 15K 1% 1/4W
R412	s	1-214-757-00	RES, METAL 15K 1% 1/4W
R413	s	1-215-431-00	RES, METAL 2.7K 1% 1/6W
R414	s	1-215-432-00	RES, METAL 3K 1% 1/6W
R415	s	1-215-421-00	RES, METAL 1K 1% 1/6W
R416	s	1-214-757-00	RES, METAL 15K 1% 1/4W
R417	s	1-214-761-00	RES, METAL 22K 1% 1/4W
R418	s	1-214-741-00	RES, METAL 3.3K 1% 1/4W
R419	s	1-214-745-00	RES, METAL 4.7K 1% 1/4W
R420	s	1-214-969-00	RES, METAL 1.6M 1% 1/4W
RB1	s	1-231-549-11	BLOCK, RESISTOR 47Kx4
RB2	s	1-231-549-11	BLOCK, RESISTOR 47Kx4
RB3	s	1-235-005-00	RESISTOR BLOCK 47K
RB4	s	1-235-005-00	RESISTOR BLOCK 47K
RV101	s	1-228-530-00	RES, ADJ, CERMET 100K
RV201	s	1-228-530-00	RES, ADJ, CERMET 100K
SW1	s	1-553-441-00	SWITCH, TOGGLE
SW2	s	1-553-441-00	SWITCH, TOGGLE
SW3	s	1-553-925-00	SWITCH, ROTARY
SW4	s	1-553-925-00	SWITCH, ROTARY

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. NO.	SP	Parts No.	Description
DET-4 BOARD			
-	o	A-7850-511-A	COMPLETE PCB, DET-4
(This assembly includes the following parts.)			
-	s	2-832-007-00	BUSHING (K), INSULATING
-	s	3-703-207-11	INSULATOR, TO-220
-	s	7-628-254-40	SCREW +PSW 2.6x12
C101	s	1-102-074-00	CAP, CERAMIC 0.001 10% 50V
C102	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C103	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C104	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C105	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C106	s	1-102-110-00	CAP, CERAMIC 220P 10% 50V
C107	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 110			
C201	s	1-102-074-00	CAP, CERAMIC 0.001 10% 50V
C202	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C203	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C204	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C205	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C206	s	1-102-110-00	CAP, CERAMIC 220P 10% 50V
C207	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 210			
C301	s	1-102-074-00	CAP, CERAMIC 0.001 10% 50V
C302	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C303	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C304	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C305	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C306	s	1-102-110-00	CAP, CERAMIC 220P 10% 50V
C307	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 310			
C401	s	1-102-074-00	CAP, CERAMIC 0.001 10% 50V
C402	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C403	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C404	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C405	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C406	s	1-102-110-00	CAP, CERAMIC 220P 10% 50V
C407	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 410			
C501	s	1-102-074-00	CAP, CERAMIC 0.001 10% 50V
C502	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C503	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C504	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C505	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C506	s	1-102-110-00	CAP, CERAMIC 220P 10% 50V
C507	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 510			
C601	s	1-102-074-00	CAP, CERAMIC 0.001 10% 50V
C602	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C603	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C604	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C605	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C606	s	1-102-110-00	CAP, CERAMIC 220P 10% 50V
C607	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 610			
C701	s	1-102-074-00	CAP, CERAMIC 0.001 10% 50V
C702	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C703	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C704	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C705	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C706	s	1-102-110-00	CAP, CERAMIC 220P 10% 50V
C707	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 710			

Ref. No.	SP	Parts No.	Description
C801	s	1-102-074-00	CAP, CERAMIC 0.001 10% 50V
C802	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C803	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C804	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C805	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C806	s	1-102-110-00	CAP, CERAMIC 220P 10% 50V
C807	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 810			
C900	s	1-161-900-11	CAP, CERAMIC 1 50V
C901	s	1-102-119-00	CAP, CERAMIC 1500P 10% 50V
C902	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C903	s	1-161-900-11	CAP, CERAMIC 1 50V
C904	s	1-102-113-00	CAP, CERAMIC 390P 10% 50V
C905	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C906	s	1-161-900-11	CAP, CERAMIC 1 50V
C907	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C950	s	1-161-900-11	CAP, CERAMIC 1 50V
to 955			
C956	s	1-124-126-00	CAP, ELECT 47 20% 25V
C957	s	1-124-126-00	CAP, ELECT 47 20% 25V
C958	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C959	s	1-124-126-00	CAP, ELECT 47 20% 25V
C960	s	1-124-126-00	CAP, ELECT 47 20% 25V
D3	s	8-719-911-19	DIODE 1SS119
D101	s	8-719-911-19	DIODE 1SS119
D102	s	8-719-911-19	DIODE 1SS119
D201	s	8-719-911-19	DIODE 1SS119
D202	s	8-719-911-19	DIODE 1SS119
D301	s	8-719-911-19	DIODE 1SS119
D302	s	8-719-911-19	DIODE 1SS119
D401	s	8-719-911-19	DIODE 1SS119
D402	s	8-719-911-19	DIODE 1SS119
D501	s	8-719-911-19	DIODE 1SS119
D502	s	8-719-911-19	DIODE 1SS119
D601	s	8-719-911-19	DIODE 1SS119
D602	s	8-719-911-19	DIODE 1SS119
D701	s	8-719-911-19	DIODE 1SS119
D702	s	8-719-911-19	DIODE 1SS119
D801	s	8-719-911-19	DIODE 1SS119
D802	s	8-719-911-19	DIODE 1SS119
IC4	s	8-759-700-05	IC NJM2043S-D
IC5	s	8-759-131-11	IC UPC311C
IC6	s	8-759-700-51	IC NJM7805A
IC7	s	8-759-700-06	IC NJM7812B
IC8	s	8-759-179-12	IC UPC7912H
IC101	s	1-807-920-11	IC REPOR
IC102	s	1-807-919-11	IC NREP
IC103	s	8-759-131-11	IC UPC311C
IC201	s	1-807-920-11	IC REPOR
IC202	s	1-807-919-11	IC NREP
IC203	s	8-759-131-11	IC UPC311C
IC301	s	1-807-920-11	IC REPOR
IC302	s	1-807-919-11	IC NREP
IC303	s	8-759-131-11	IC UPC311C
IC401	s	1-807-920-11	IC REPOR
IC402	s	1-807-919-11	IC NREP
IC403	s	8-759-131-11	IC UPC311C
IC501	s	1-807-920-11	IC REPOR
IC502	s	1-807-919-11	IC NREP
IC503	s	8-759-131-11	IC UPC311C
IC601	s	1-807-920-11	IC REPOR
IC602	s	1-807-919-11	IC NREP
IC603	s	8-759-131-11	IC UPC311C
IC701	s	1-807-920-11	IC REPOR
IC702	s	1-807-919-11	IC NREP

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
IC703	s	8-759-131-11	IC UPC311C
IC801	s	1-807-920-11	IC REPOR
IC802	s	1-807-919-11	IC NREP
IC803	s	8-759-131-11	IC UPC311C
Q3	s	8-729-364-72	TRANSISTOR 2SB647
Q4	s	8-729-201-52	TRANSISTOR 2SA1015-GR
Q5	s	8-729-201-52	TRANSISTOR 2SA1015-GR
Q101	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q102	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q201	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q202	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q301	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q302	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q401	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q402	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q501	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q502	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q601	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q602	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q701	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q702	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q801	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q802	s	8-729-203-04	TRANSISTOR 2SK30A-GR
R104	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R106	s	1-247-854-00	RES, CARBON 9.1K 5% 1/4W
R109	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R204	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R206	s	1-247-854-00	RES, CARBON 9.1K 5% 1/4W
R209	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R304	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R306	s	1-247-854-00	RES, CARBON 9.1K 5% 1/4W
R309	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R404	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R406	s	1-247-854-00	RES, CARBON 9.1K 5% 1/4W
R409	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R504	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R506	s	1-247-854-00	RES, CARBON 9.1K 5% 1/4W
R509	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R604	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R606	s	1-247-854-00	RES, CARBON 9.1K 5% 1/4W
R609	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R704	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R706	s	1-247-854-00	RES, CARBON 9.1K 5% 1/4W
R709	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R804	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R806	s	1-247-854-00	RES, CARBON 9.1K 5% 1/4W
R809	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R913	s	1-215-454-00	RES, METAL 24K 1% 1/6W
R954	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R957	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
RL1	s	1-515-660-11	RELAY
RV5	s	1-230-845-11	RES, ADJ, METAL 50K
RV6	s	1-230-841-11	RES, ADJ, METAL 2K
RV101	s	1-230-845-11	RES, ADJ, METAL 50K
RV102	s	1-228-530-00	RES, ADJ, CERMET 100K
RV103	s	1-230-844-11	RES, ADJ, METAL 20K
RV104	s	1-228-530-00	RES, ADJ, CERMET 100K
RV201	s	1-230-845-11	RES, ADJ, METAL 50K
RV202	s	1-228-530-00	RES, ADJ, CERMET 100K
RV203	s	1-230-844-11	RES, ADJ, METAL 20K
RV204	s	1-228-530-00	RES, ADJ, CERMET 100K
RV301	s	1-230-845-11	RES, ADJ, METAL 50K
RV302	s	1-228-530-00	RES, ADJ, CERMET 100K
RV303	s	1-230-844-11	RES, ADJ, METAL 20K
RV304	s	1-228-530-00	RES, ADJ, CERMET 100K
RV401	s	1-230-845-11	RES, ADJ, METAL 50K

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
RV402	s	1-228-530-00	RES, ADJ, CERMET 100K
RV403	s	1-230-844-11	RES, ADJ, METAL 20K
RV404	s	1-228-530-00	RES, ADJ, CERMET 100K
RV501	s	1-230-845-11	RES, ADJ, METAL 50K
RV502	s	1-228-530-00	RES, ADJ, CERMET 100K
RV503	s	1-230-844-11	RES, ADJ, METAL 20K
RV504	s	1-228-530-00	RES, ADJ, CERMET 100K
RV601	s	1-230-845-11	RES, ADJ, METAL 50K
RV602	s	1-228-530-00	RES, ADJ, CERMET 100K
RV603	s	1-230-844-11	RES, ADJ, METAL 20K
RV604	s	1-228-530-00	RES, ADJ, CERMET 100K
RV701	s	1-230-845-11	RES, ADJ, METAL 50K
RV702	s	1-228-530-00	RES, ADJ, CERMET 100K
RV703	s	1-230-844-11	RES, ADJ, METAL 20K
RV704	s	1-228-530-00	RES, ADJ, CERMET 100K
RV801	s	1-230-845-11	RES, ADJ, METAL 50K
RV802	s	1-228-530-00	RES, ADJ, CERMET 100K
RV803	s	1-230-844-11	RES, ADJ, METAL 20K
RV804	s	1-228-530-00	RES, ADJ, CERMET 100K
DIO-2 BOARD			
-	o	A-7850-472-A	COMPLETE PCB, DIO-2
(This assembly includes the following parts.)			
-	s	1-561-832-00	SOCKET, SHORT
-	s	2-251-622-11	LEVER, PC BOARD
C1	s	1-124-479-11	CAP, ELECT 330 20% 25V
C2	s	1-124-479-11	CAP, ELECT 330 20% 25V
C3	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C5	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C7	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C8	s	1-103-721-00	CAP, STYROL 680P 5% 50V
C10	s	1-103-741-00	CAP, STYROL 0.0047 5% 50V
C11	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C12	s	1-124-478-11	CAP, ELECT 100 20% 25V
C13	s	1-124-478-11	CAP, ELECT 100 20% 25V
C14	s	1-102-110-00	CAP, CERAMIC 220P 10% 50V
C15	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C16	s	1-103-745-00	CAP, STYROL 0.0068 5% 50V
C17	s	1-124-478-11	CAP, ELECT 100 20% 25V
C18	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C19	s	1-103-735-00	CAP, STYROL 0.0027 5% 50V
C20	s	1-107-077-00	CAP, MICA 47P 5% 50V
C21	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C22	s	1-124-478-11	CAP, ELECT 100 20% 25V
C23	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C24	s	1-136-169-00	CAP, METAL FILM 0.22
C25	s	1-136-169-00	CAP, METAL FILM 0.22
C26	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
C27	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
C28	s	1-102-959-00	CAP, CERAMIC 22P 5% 50V
C29	s	1-102-959-00	CAP, CERAMIC 22P 5% 50V
C30	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
C31	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
C32	s	1-102-106-00	CAP, CERAMIC 100P 10% 50V
C33	s	1-102-106-00	CAP, CERAMIC 100P 10% 50V
C34	s	1-103-711-00	CAP, STYROL 270P 5% 50V
C37	s	1-123-622-00	CAP, ELECT 22 20% 16V
C38	s	1-124-479-11	CAP, ELECT 330 20% 25V
C40	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C172,	s	1-136-169-00	CAP, METAL FILM 0.22
173			
D1	s	8-719-901-75	DIODE 1SS88
D2	s	8-719-901-75	DIODE 1SS88
D3	s	8-719-921-20	DIODE 1SS119TD
D7	s	8-719-812-43	DIODE TLG124A
to 10			

Ref. No.	SP	Parts No.	Description
D11	s	8-719-812-44	DIODE TL0124
D12	s	8-719-100-30	DIODE
DB1	s	8-759-107-45	IC UPA54HA
DB2	s	8-759-107-45	IC UPA54HA
DB3	s	8-759-107-46	IC UPA64HA
DB4	s	8-759-107-46	IC UPA64HA
ICA1 to 3	s	8-759-203-30	IC TC74HC365P
ICA4 to 7	s	8-759-203-50	IC TC74HC574P
ICA8	s	8-759-007-09	IC MC74HC540N
ICA9	s	8-759-007-09	IC MC74HC540N
ICB3	s	8-759-203-32	IC TC74HC366P
ICB4	s	8-759-203-52	IC TC74HC595P
ICB5	s	8-759-203-52	IC TC74HC595P
ICB6	s	8-759-203-52	IC TC74HC595P
ICB7	s	8-759-000-99	IC MC74HC74N
ICB8	s	8-759-203-30	IC TC74HC365P
ICB9	s	8-759-202-24	IC TC74HC86P
ICB10	s	8-759-008-57	IC MC34051P
ICB11	s	8-759-951-24	IC SN75124N
ICC1	s	8-759-900-61	IC LM361N
ICC3	s	8-759-203-60	IC TC74HC670P
ICC4	s	8-759-203-60	IC TC74HC670P
ICC5	s	8-759-203-52	IC TC74HC595P
ICC6	s	8-759-203-52	IC TC74HC595P
ICC7	s	8-759-203-52	IC TC74HC595P
ICC8	s	8-759-001-39	IC MC74HC164N
ICC9	s	8-759-202-99	IC TC74HC173P
ICC10	s	8-759-202-84	IC TC74HC109P
ICC11	s	8-759-951-21	IC SN75121N
ICD1	s	8-759-202-86	IC TC74HC123P
ICD2	s	8-759-918-71	IC CX23065
ICD3	s	8-759-203-60	IC TC74HC670P
ICD4	s	8-759-203-60	IC TC74HC670P
ICD5	s	8-759-203-52	IC TC74HC595P
ICD6	s	8-759-203-52	IC TC74HC595P
ICD7	s	8-759-203-52	IC TC74HC595P
ICD8	s	8-759-001-39	IC MC74HC164N
ICD9	s	8-759-202-99	IC TC74HC173P
ICD10	s	8-759-202-14	IC TC74HC08P
ICD11	s	8-759-202-21	IC TC74HC32P
ICE1	s	8-759-906-24	IC SN74LS624N
ICE2	s	8-759-203-40	IC TC74HC393P
ICE3	s	8-759-004-84	IC MC74HC597N
ICE4	s	8-759-004-84	IC MC74HC597N
ICE5	s	8-759-202-98	IC TC74HC166P
ICE6	s	8-759-203-40	IC TC74HC393P
ICE7	s	8-759-202-74	IC TC74HC04P
ICE8	s	8-759-202-24	IC TC74HC86P
ICE9	s	8-759-202-74	IC TC74HC04P
ICE10	s	8-759-202-98	IC TC74HC166P
ICE11	s	8-759-000-99	IC MC74HC74N
ICF1	s	8-759-203-50	IC TC74HC574P
ICF3	s	8-759-004-84	IC MC74HC597N
ICF4	s	8-759-004-84	IC MC74HC597N
ICF5	s	8-759-202-98	IC TC74HC166P
ICF6	s	8-759-202-14	IC TC74HC08P
ICF7	s	8-759-202-32	IC TC74HC163P
ICF8	s	8-759-001-42	IC MC74HC174N
ICF9	s	8-759-202-11	IC TC74HC00P
ICF10	s	8-759-202-74	IC TC74HC04P
ICF11	s	8-759-202-84	IC TC74HC109P

Ref.No. No.	SP	Parts No.	Description
ICH3	s	8-759-202-97	IC TC74HC165P
ICH4	s	8-759-202-97	IC TC74HC165P
ICH5	s	8-759-202-98	IC TC74HC166P
ICH6	s	8-759-202-27	IC TC74HC157P
ICH7	s	8-759-202-32	IC TC74HC163P
ICH8	s	8-759-000-99	IC MC74HC74N
ICH9	s	8-759-203-01	IC TC74HC175P
ICH10	s	8-759-202-32	IC TC74HC163P
ICH11	s	8-759-202-32	IC TC74HC163P
ICJ1	s	8-759-787-83	IC 27C256A-DIO-J1-V1.0
ICJ3	s	8-759-004-84	IC MC74HC597N
ICJ4	s	8-759-004-84	IC MC74HC597N
ICJ5	s	8-759-202-98	IC TC74HC166P
ICJ6	s	8-759-202-74	IC TC74HC04P
ICJ7	s	8-759-202-18	IC TC74HC20P
ICJ8	s	8-759-203-50	IC TC74HC574P
ICJ9	s	8-759-776-34	IC TBP28L42N-DIO-J9
ICJ10	s	8-759-202-32	IC TC74HC163P
ICJ11	s	8-759-202-32	IC TC74HC163P
ICK1	s	8-759-202-32	IC TC74HC163P
ICK2	s	8-759-202-32	IC TC74HC163P
ICK3	s	8-759-202-98	IC TC74HC166P
ICK4	s	8-759-933-44	IC FLS159N-001
ICK5	s	8-759-933-44	IC FLS159N-001
ICK6	s	8-759-001-42	IC MC74HC174N
ICK7	s	8-759-778-67	IC TBP28L42N-DIO-K7
ICK8	s	8-759-946-36	IC SN74ALS163BN
ICK9	s	8-759-946-36	IC SN74ALS163BN
ICK10	s	8-759-202-86	IC TC74HC123P
ICK11	s	8-759-202-86	IC TC74HC123P
ICL1	s	8-759-202-30	IC TC74HC161P
ICL2	s	8-759-776-69	IC MB7114L-DIO-L2
ICL3	s	8-759-001-42	IC MC74HC174N
ICL4	s	8-759-203-52	IC TC74HC595P
ICL5	s	8-759-203-52	IC TC74HC595P
ICL6	s	8-759-000-99	IC MC74HC74N
ICL7	s	8-759-202-14	IC TC74HC08P
ICL8	s	8-759-000-99	IC MC74HC74N
ICL9	s	8-759-202-11	IC TC74HC00P
ICL10	s	8-759-202-24	IC TC74HC86P
ICL11	s	8-759-000-99	IC MC74HC74N
ICM1	s	8-759-202-30	IC TC74HC161P
ICM2	s	8-759-202-99	IC TC74HC173P
ICM3	s	8-759-202-99	IC TC74HC173P
ICM4	s	8-759-776-71	IC MB7114L-DIO-M4
ICM5	s	8-759-776-72	IC MB7114L-DIO-M5
ICM6	s	8-759-202-12	IC TC74HC02P
ICM7	s	8-759-202-14	IC TC74HC08P
ICM8	s	8-759-778-63	IC MB7112L-DIO-M8
ICM9	s	8-759-000-99	IC MC74HC74N
ICM10	s	8-759-202-74	IC TC74HC04P
ICM11	s	8-759-001-42	IC MC74HC174N
ICN2	s	8-759-000-99	IC MC74HC74N
ICN3	s	8-759-000-99	IC MC74HC74N
ICN4	s	8-759-202-74	IC TC74HC04P
ICN5	s	8-759-202-26	IC TC74HC138P
ICN6	s	8-759-203-01	IC TC74HC175P
ICN7	s	8-759-202-17	IC TC74HC14P
ICN8	s	8-759-000-99	IC MC74HC74N
ICN9	s	8-759-000-99	IC MC74HC74N
ICN10	s	8-759-001-39	IC MC74HC164N
ICN11	s	8-759-776-70	IC MB7114L-DIO-N11
Q1	s	8-729-124-08	TRANSISTOR 2SC2408
Q2	s	8-729-800-44	TRANSISTOR 2SK152-4

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
R3	s	1-247-838-00	RES, CARBON 2K 5% 1/4W
R14	s	1-247-808-00	RES, CARBON 1/4W 110 5%
R33	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
R34	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
R38	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
RB1	s	1-231-385-00	RESISTOR BLOCK 4.7K
RB2	s	1-231-385-00	RESISTOR BLOCK 4.7K
RB3	s	1-235-005-00	RESISTOR BLOCK 47K
RB4	s	1-235-005-00	RESISTOR BLOCK 47K
RB5	s	1-235-005-00	RESISTOR BLOCK 47K
RB6	s	1-231-401-00	RESISTOR BLOCK 470
RB7	s	1-235-005-00	RESISTOR BLOCK 47K
RB8	s	1-235-005-00	RESISTOR BLOCK 47K
RB9	s	1-231-549-11	RESISTOR BLOCK 47Kx4
SW1	s	1-553-441-00	SWITCH, TOGGLE
SW2	s	1-570-623-11	SWITCH, DIP
SW3	o	1-570-598-11	SWITCH, DIP

DR-54 BOARD

- o A-7850-486-A COMPLETE PCB, DR-54
(This assembly includes the following parts.)

-	s	1-548-100-31	TIMER
-	s	2-832-007-00	BUSHING (K), INSULATING
-	s	3-703-207-11	INSULATOR, TO-220
-	s	7-628-254-40	SCREW +PSW 2.6x12
C1	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C2	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C4	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 7			
C8	s	1-102-973-00	CAP, CERAMIC 100P 5% 50V
C9	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 11			
C13	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 16			
C17	s	1-102-973-00	CAP, CERAMIC 100P 5% 50V
C18	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C19	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C20	s	1-102-973-00	CAP, CERAMIC 100P 5% 50V
C21	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 23			
C25	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 28			
C29	s	1-102-973-00	CAP, CERAMIC 100P 5% 50V
C30	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C31	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C32	s	1-124-509-51	CAP, ELECT 100 20% 35V
C33	s	1-124-509-51	CAP, ELECT 100 20% 35V
C34	s	1-123-333-00	CAP, ELECT 100 20% 25V
C35	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C36	s	1-124-649-51	CAP, ELECT NONPOLAR 10 20% 35V
C37	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 44			
C45	s	1-123-333-00	CAP, ELECT 100 20% 25V
C46	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 48			

Ref. NO.	SP	Parts No.	Description
C49	s	1-102-973-00	CAP, CERAMIC 100P 5% 50V
C50	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C51	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C52	s	1-102-973-00	CAP, CERAMIC 100P 5% 50V
C53	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C54	s	1-123-333-00	CAP, ELECT 100 20% 25V
C55	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 59			
CN461	o	1-560-361-00	CONNECTOR POST HEADER, ILG (8P)
CN462	o	1-560-176-00	CONNECTOR 2P
CN463	o	1-560-176-00	CONNECTOR 2P
CN464	o	1-560-358-00	CONNECTOR POST HEADER, ILG (4P)
CN465	o	1-560-176-00	CONNECTOR 2P
CN466	o	1-560-356-00	CONNECTOR POST HEADER, ILG (2P)
CN467	o	1-560-358-00	CONNECTOR POST HEADER, ILG (4P)
CN909	o	1-560-178-00	CONNECTOR 6P
D1	s	8-719-911-19	DIODE 1SS119
to 9			
D10	s	8-719-993-72	DIODE HZ7B2
D11	s	8-719-911-19	DIODE 1SS119
to 15			
D16	s	8-719-200-77	DIODE 10E2N
to 21			
IC1	s	8-759-910-83	IC TL072ACP
IC2	s	8-759-202-24	IC TC74HC86P
IC3	s	8-759-131-11	IC UPC311C
IC4	s	8-759-131-11	IC UPC311C
IC5	s	8-759-990-04	IC TL074CN
IC6	s	8-759-202-11	IC TC74HC00P
IC7	s	8-759-171-18	IC UPC7818H
IC8	s	8-759-990-04	IC TL074CN
IC9	s	8-759-700-34	IC NJM7918A
L1	s	1-408-242-21	INDUCTOR, MICRO 10M 5%
Q1	s	8-729-201-97	TRANSISTOR 28C3182
Q2	s	8-729-800-44	TRANSISTOR 28K152-4
Q3	s	8-729-281-53	TRANSISTOR 28C1815-GR
Q4	s	8-729-281-53	TRANSISTOR 28C1815-GR
Q5	s	8-729-201-53	TRANSISTOR 28A1015-GR
Q6	s	8-729-281-53	TRANSISTOR 28C1815-GR
Q7	s	8-729-304-92	TRANSISTOR 28B649-C
Q8	s	8-729-201-53	TRANSISTOR 28A1015-GR
Q9	s	8-729-306-92	TRANSISTOR 28D669A-C
Q10	s	8-729-201-89	TRANSISTOR 28A1265-0
Q11	s	8-729-201-97	TRANSISTOR 28C3182
Q12	s	8-729-208-82	TRANSISTOR 28J75-BL
Q13	s	8-729-281-53	TRANSISTOR 28C1815-GR
Q14	s	8-729-281-53	TRANSISTOR 28C1815-GR
Q15	s	8-729-201-53	TRANSISTOR 28A1015-GR
Q16	s	8-729-281-53	TRANSISTOR 28C1815-GR
Q17	s	8-729-304-92	TRANSISTOR 28B649-C
Q18	s	8-729-201-53	TRANSISTOR 28A1015-GR
Q19	s	8-729-306-92	TRANSISTOR 28D669A-C
Q20	s	8-729-201-89	TRANSISTOR 28A1265-0
Q21	s	8-729-201-97	TRANSISTOR 28C3182
Q22	s	8-729-208-82	TRANSISTOR 28J75-BL
Q23	s	8-729-281-53	TRANSISTOR 28C1815-GR
Q24	s	8-729-281-53	TRANSISTOR 28C1815-GR
Q25	s	8-729-201-53	TRANSISTOR 28A1015-GR

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
Q26	s	8-729-281-53	TRANSISTOR 2SC1815-GR
Q27	s	8-729-304-92	TRANSISTOR 2SB649-C
Q28	s	8-729-201-53	TRANSISTOR 2SA1015-GR
Q29	s	8-729-306-92	TRANSISTOR 2SD669A-C
Q30	s	8-729-201-89	TRANSISTOR 2SA1265-0
Q31	s	8-729-281-53	TRANSISTOR 2SC1815-GR
Q32	s	8-729-201-53	TRANSISTOR 2SA1015-GR
Q33	s	8-729-201-53	TRANSISTOR 2SA1015-GR
Q34	s	8-729-281-53	TRANSISTOR 2SC1815-GR
Q35	s	8-729-281-53	TRANSISTOR 2SC1815-GR
R11	s	1-217-611-00	RES, METAL 0.1 10% 2W
R12	s	1-217-611-00	RES, METAL 0.1 10% 2W
R13	s	1-217-153-00	RES, METAL 0.47 10% 2W
R14	s	1-217-611-00	RES, METAL 0.1 10% 2W
R24	s	1-217-153-00	RES, METAL 0.47 10% 2W
R25	s	1-217-611-00	RES, METAL 0.1 10% 2W
R37	s	1-217-153-00	RES, METAL 0.47 10% 2W
R38	s	1-217-611-00	RES, METAL 0.1 10% 2W
R39	s	1-217-611-00	RES, METAL 0.1 10% 2W
RV1	s	1-230-843-11	RES, ADJ, METAL 10K
RV2	s	1-230-843-11	RES, ADJ, METAL 10K
RV3	s	1-230-837-11	RES, ADJ, METAL 100
RV4	s	1-230-837-11	RES, ADJ, METAL 100
RV5	s	1-230-837-11	RES, ADJ, METAL 100

DSC-36 BOARD

- o A-7850-491-A MOUNTED PCB, DSC-36
(This assembly includes the following parts.)

-	o	3-621-124-00	SPACER
C1	s	1-124-891-11	CAP, ELECT 10000 20% 6.3V
C2	s	1-136-177-00	CAP, METAL 1 5% 50V
C3	s	1-136-177-00	CAP, METAL 1 5% 50V
C4	s	1-124-898-11	CAP, ELECT 4700 20% 16V
C5	s	1-124-898-11	CAP, ELECT 4700 20% 16V
C7	s	1-124-471-00	CAP, ELECT 1000 20% 6.3V
C8	s	1-124-898-11	CAP, ELECT 4700 20% 16V
C9	s	1-124-898-11	CAP, ELECT 4700 20% 16V
C10	s	1-136-169-00	CAP, METAL 0.22 5% 50V
C67	s	1-123-661-00	CAP, ELECT 100 20% 6.3V
C69	s	1-123-661-00	CAP, ELECT 100 20% 6.3V
C71	s	1-123-661-00	CAP, ELECT 100 20% 6.3V
C73	s	1-123-661-00	CAP, ELECT 100 20% 6.3V
C74	s	1-124-891-11	CAP, ELECT 10000 20% 6.3V
CN312	o	1-560-361-00	CONNECTOR POST HEADER, ILG (8P)
CN313	o	1-560-369-00	CONNECTOR POST HEADER, ILG (8P)
CN314	s	1-566-156-11	CONNECTOR, PS-SF 40P
CN315	s	1-566-156-11	CONNECTOR, PS-SF 40P
CN319	o	1-560-363-00	CONNECTOR POST HEADER, ILG (12P)
CN905	o	1-560-361-00	CONNECTOR POST HEADER, ILG (8P)
D1 to 6	s	8-719-911-19	DIODE 1SS119
D7	s	8-719-100-35	DIODE RD5.6E-E2
D8	s	8-719-911-19	DIODE 1SS119
D9	s	8-719-911-19	DIODE 1SS119

Ref. No.	SP	Parts No.	Description
IC1	s	8-759-202-91	IC TC74HC148P
IC2	s	8-759-974-06	IC SN7406N
IC3	s	8-759-203-40	IC TC74HC393P
ICB1	s	8-759-202-99	IC TC74HC173P
ICB2	s	8-759-910-83	IC TL072ACP
ICB4	s	8-759-990-04	IC TL074CN
ICB5	s	8-759-133-90	IC UPC339C
ICB6	s	8-759-133-90	IC UPC339C
ICB7	s	8-759-916-98	IC SN74HC377N
ICC1	s	8-759-202-99	IC TC74HC173P
ICC2	s	8-759-202-99	IC TC74HC173P
ICC3	s	8-759-202-99	IC TC74HC173P
ICC4	s	8-759-202-26	IC TC74HC138P
ICC7	s	8-759-974-06	IC SN7406N
ICD3	s	8-759-203-30	IC TC74HC365P
ICD4	s	8-759-202-56	IC TC74HC245P
ICE1	s	8-759-916-99	IC SN74HC378N
ICE2	s	8-759-778-12	IC 27C512-DSC-E2
ICE3	s	8-759-202-21	IC TC74HC32P
ICE4	s	8-759-203-48	IC TC74HC573P
ICE5	s	8-759-209-05	IC TMP82C79P-2
ICF1	s	8-759-202-21	IC TC74HC32P
ICF2	s	8-759-916-98	IC SN74HC377N
ICF3	s	8-759-202-14	IC TC74HC08P
ICF4	s	8-759-974-06	IC SN7406N
ICF5	s	8-759-974-06	IC SN7406N
ICF6	s	8-759-974-06	IC SN7406N
ICG1	s	8-759-916-98	IC SN74HC377N
ICG2	s	8-759-202-74	IC TC74HC04P
ICG3	s	8-759-202-32	IC TC74HC163P
ICG4	s	8-759-776-45	IC TBP28L42N-DSC-G4
ICG5	s	8-759-776-46	IC TBP28L42N-DSC-G5
ICG6	s	8-759-974-06	IC SN7406N
ICH1	s	8-759-776-47	IC TBP28L42N-DSC-H1
ICH2	s	8-759-776-48	IC TBP28L42N-DSC-H2
ICH3	s	8-759-202-32	IC TC74HC163P
ICH4	s	8-759-776-49	IC TBP28L42N-DSC-H4
ICH5	s	8-759-776-50	IC TBP28L42N-DSC-H5
ICH6	s	8-759-974-06	IC SN7406N
ICI1	s	8-759-914-39	IC MEM2114A-10LP
ICI2	s	8-759-776-51	IC TBP28L42N-DSC-I2
ICI3	s	8-759-916-99	IC SN74HC378N
ICI4	s	8-759-916-99	IC SN74HC378N
ICI5	s	8-759-004-63	IC MC74HC125N
ICI6	s	8-759-202-14	IC TC74HC08P
ICI7	s	8-759-202-21	IC TC74HC32P
ICJ1	s	8-759-916-98	IC SN74HC377N
ICJ2	s	8-759-916-98	IC SN74HC377N
ICJ3	s	8-759-916-98	IC SN74HC377N
ICJ4	s	8-759-776-52	IC TBP28L42N-DSC-J4
ICJ5	s	8-759-203-30	IC TC74HC365P
ICJ6	s	8-759-916-98	IC SN74HC377N
ICJ7	s	8-759-202-74	IC TC74HC04P
L1	s	1-409-309-00	COIL, SN 72UH
L2	s	1-409-309-00	COIL, SN 72UH
L3	s	1-409-309-00	COIL, SN 72UH
Q1	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q2	s	8-729-281-53	TRANSISTOR 2SC1815-GR
Q3	s	8-729-201-53	TRANSISTOR 2SA1015-GR
Q4	s	8-729-281-53	TRANSISTOR 2SC1815-GR
Q5	s	8-729-201-53	TRANSISTOR 2SA1015-GR
Q6	s	8-729-203-04	TRANSISTOR 2SK30A-GR
Q7	s	8-729-206-12	TRANSISTOR 2SA1244-Y

to 14

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
Q15 to 22	s	8-729-206-56	TRANSISTOR 2SC3072-C
Q23	s	8-729-281-53	TRANSISTOR 2SC1815-GR
R8	s	1-247-881-00	RES, CARBON 120K 5% 1/4W
R14	s	1-247-881-00	RES, CARBON 120K 5% 1/4W
R18	s	1-215-395-00	RES, METAL 82 1% 1/6W
R19	s	1-215-395-00	RES, METAL 82 1% 1/6W
R20	s	1-215-406-00	RES, METAL 240 1% 1/6W
R21	s	1-215-406-00	RES, METAL 240 1% 1/6W
R22	s	1-215-403-00	RES, METAL 180 1% 1/6W
R23	s	1-215-416-00	RES, METAL 620 1% 1/6W
R24	s	1-215-433-00	RES, METAL 3.3K 1% 1/6W
R25	s	1-215-443-00	RES, METAL 8.2K 1% 1/6W
R39	s	1-215-492-00	RES, CARBON 910K 1% 1/6W
RB1	s	1-235-005-00	RESISTOR BLOCK 47K
RB2	s	1-235-005-00	RESISTOR BLOCK 47K
RB3	s	1-231-549-11	RESISTOR BLOCK 47Kx4
RB4	s	1-235-005-00	RESISTOR BLOCK 47K
RB5	s	1-235-005-00	RESISTOR BLOCK 47K
RB6	s	1-235-005-00	RESISTOR BLOCK 47K

DSP-13 BOARD

- o A-7850-492-A MOUNTED PCB, DSP-13
(This assembly includes the following parts.)

C1	s	1-124-471-00	CAP, ELECT 1000 20% 6.3V
C2	s	1-123-661-00	CAP, ELECT 100 20% 6.3V
C3	s	1-123-661-00	CAP, ELECT 100 20% 6.3V
C4	s	1-124-471-00	CAP, ELECT 1000 20% 6.3V
CN317	o	1-560-362-00	CONNECTOR POST HEADER, ILG (10P)
D14	s	8-719-821-14	DIODE TLR114A
D15 to 26	s	8-719-811-44	DIODE TLG114A
D27 to 30	s	8-719-812-41	DIODE TLR124
D31	s	8-719-812-41	DIODE TLR124
D32	s	8-719-811-44	DIODE TLG114A
D33	s	8-719-811-44	DIODE TLG114A
D34	s	8-719-945-71	DIODE BR5551K
D35	s	8-719-945-73	DIODE PY5551K-M-92
D36 to 41	s	8-719-945-72	DIODE BG5551K-92
D42	s	8-719-945-71	DIODE BR5551K
D43	s	8-719-945-73	DIODE PY5551K-M-92
D44 to 49	s	8-719-945-72	DIODE BG5551K-92
D50	s	8-719-945-71	DIODE BR5551K
D51 to 82	s	8-719-945-72	DIODE BG5551K-92
D83 to 88	s	8-719-945-73	DIODE PY5551K-M-92
D89	s	8-719-945-71	DIODE BR5551K
D90 to 121	s	8-719-945-72	DIODE BG5551K-92

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
D122 to 134	s	8-719-911-19	DIODE 1SS119
SW1 to 13	s	1-554-048-00	SWITCH, PUSH

DSP-14 BOARD

- o A-7850-502-A MOUNTED PCB, DSP-14
(This assembly includes the following parts.)

-	o	4-920-509-01	CAP (GRAY PLAIN), KEY
-	o	3-711-156-01	KEY CAP (R)
-	o	3-711-157-01	KEY CAP (ARROW)

D1 to 5	s	8-719-911-19	DIODE 1SS119
D6	s	8-719-812-43	DIODE TLG124A
D7	s	8-719-812-43	DIODE TLG124A
D8	s	8-719-939-91	DIODE HDSF-4850
D9	s	8-719-939-91	DIODE HDSF-4850
D10	s	8-719-939-91	DIODE HDSF-4850
DG1 to 18	s	8-719-907-82	DIODE GL-9E03D
SW1 to 5	s	1-554-761-11	SWITCH, KEY BOARD (WITH LED)

ED-16 BOARD

- o A-7850-466-A MOUNTED PCB, ED-16
(This assembly includes the following parts.)

-	s	2-251-622-11	LEVER, PC BOARD
ICA1 to 9	s	8-759-203-50	IC TC74HC574P
ICA10	s	8-759-203-60	IC TC74HC670P
ICA11	s	8-759-203-60	IC TC74HC670P
ICB1 to 6	s	8-759-203-50	IC TC74HC574P
ICB7	s	8-759-001-42	IC MC74HC174N
ICB8	s	8-759-001-42	IC MC74HC174N
ICB9	s	8-759-203-50	IC TC74HC574P
ICB10	s	8-759-916-98	IC SN74HC377N
ICB11	s	8-759-202-34	IC TC74HC257P
ICC1	s	8-759-203-50	IC TC74HC574P
ICC2	s	8-759-203-50	IC TC74HC574P
ICC3	s	8-759-202-27	IC TC74HC157P
ICC6	s	8-759-914-39	IC MBM2114A-10LP
ICC7	s	8-759-914-39	IC MBM2114A-10LP
ICC11	s	8-759-202-74	IC TC74HC04P
ICD1	s	8-759-203-24	IC TC74HC283P
ICD2	s	8-759-203-24	IC TC74HC283P
ICD3	s	8-759-202-27	IC TC74HC157P
ICD6	s	8-759-203-50	IC TC74HC574P
ICD7	s	8-759-203-50	IC TC74HC574P

Ref. No.	SP	Parts No.	Description
ICD9	s	8-759-778-65	IC 27C512P-ED16-D9
ICD10	s	8-759-203-50	IC TC74HC574P
ICD11	s	8-759-202-14	IC TC74HC08P
ICE1	s	8-759-203-50	IC TC74HC574P
ICE2	s	8-759-203-50	IC TC74HC574P
ICE3	s	8-759-202-27	IC TC74HC157P
ICE5	s	8-759-938-51	IC ADSP-1010AJN
ICE6	s	8-759-203-50	IC TC74HC574P
ICE7	s	8-759-203-50	IC TC74HC574P
ICE8	s	8-759-776-73	IC MB7114L-ED16-E8
ICE9	s	8-759-916-98	IC SN74HC377N
ICE10	s	8-759-203-60	IC TC74HC670P
ICE11	s	8-759-776-74	IC MB7114L-ED16-E11

ICF1	s	8-759-203-24	IC TC74HC283P
ICF2	s	8-759-203-24	IC TC74HC283P
ICF3	s	8-759-202-27	IC TC74HC157P
ICF4	s	8-759-203-50	IC TC74HC574P
ICF5	s	8-759-203-50	IC TC74HC574P
ICF6	s	8-759-202-21	IC TC74HC32P

ICF7	s	8-759-202-74	IC TC74HC04P
ICF8	s	8-759-202-78	IC TC74HC51P
ICF9	s	8-759-202-21	IC TC74HC32P
ICF10	s	8-759-202-32	IC TC74HC163P
ICF11	s	8-759-000-99	IC MC74HC74N

ICH1	s	8-759-914-39	IC MBM2114A-10LP
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to 4

ICH5	s	8-759-202-32	IC TC74HC163P
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to 7

ICH8	s	8-759-776-75	IC MB7114L-ED16-H8
ICH9	s	8-759-202-11	IC TC74HC00P
ICH10	s	8-759-916-99	IC SN74HC378N
ICH11	s	8-759-001-42	IC MC74HC174N

ICJ1	s	8-759-202-32	IC TC74HC163P
ICJ2	s	8-759-001-42	IC MC74HC174N
ICJ3	s	8-759-776-35	IC TBP28L42N-ED16-J3
ICJ4	s	8-759-776-36	IC TBP28L42N-ED16-J4
ICJ5	s	8-759-776-37	IC TBP28L42N-ED16-J5

ICJ6	s	8-759-776-38	IC TBP28L42N-ED16-J6
ICJ7	s	8-759-203-50	IC TC74HC574P
ICJ8	s	8-759-000-99	IC MC74HC74N
ICJ9	s	8-759-202-24	IC TC74HC86P
ICJ10	s	8-759-202-34	IC TC74HC257P
ICJ11	s	8-759-202-34	IC TC74HC257P

ICK1	s	8-759-776-76	IC MB7114L-ED16-K1
ICK2	s	8-759-776-77	IC MB7114L-ED16-K2
ICK3	s	8-759-914-39	IC MBM2114A-10LP
ICK4	s	8-759-776-39	IC TBP28L42N-ED16-K4
ICK5	s	8-759-203-50	IC TC74HC574P

ICK6	s	8-759-202-32	IC TC74HC163P
ICK7	s	8-759-202-32	IC TC74HC163P
ICK8	s	8-759-202-14	IC TC74HC08P
ICK9	s	8-759-203-52	IC TC74HC595P
ICK10	s	8-759-202-92	IC TC74HC151P
ICK11	s	8-759-001-42	IC MC74HC174N

ICL1	s	8-759-001-39	IC MC74HC164N
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to 3

ICL4	s	8-759-203-17	IC TC74HC251P
ICL5	s	8-759-000-99	IC MC74HC74N
ICL6	s	8-759-202-11	IC TC74HC00P
ICL7	s	8-759-000-99	IC MC74HC74N
ICL8	s	8-759-202-21	IC TC74HC32P

ICL9	s	8-759-202-74	IC TC74HC04P
ICL10	s	8-759-001-42	IC MC74HC174N
ICL11	s	8-759-000-99	IC MC74HC74N

Ref. No.	SP	Parts No.	Description
ICM1	s	8-759-000-99	IC MC74HC74N
to 3			
ICM4	s	8-759-202-14	IC TC74HC08P
ICM5	s	8-759-202-74	IC TC74HC04P
ICM6	s	8-759-202-24	IC TC74HC86P
ICM7	s	8-759-202-93	IC TC74HC153P
ICM8	s	8-759-202-32	IC TC74HC163P
ICM9	s	8-759-202-84	IC TC74HC109P
ICM10	s	8-759-202-32	IC TC74HC163P
ICM11	s	8-759-202-32	IC TC74HC163P
RB1	s	1-235-005-00	RESISTOR BLOCK 47K
to 7			
SW1	s	1-553-252-00	SWITCH, ROTARY

ED-17 BOARD

- o A-7850-467-B MOUNTED PCB, ED-17
(This assembly includes the following parts.)

-	s	2-251-622-00	LEVER, PC BOARD
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C1	s	1-161-974-00	CAP, CERAMIC 0.1 20% 16V
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ICA1	s	8-759-202-34	IC TC74HC257P
ICA2	s	8-759-202-34	IC TC74HC257P
ICA3	s	8-759-001-39	IC MC74HC164N
ICA4	s	8-759-001-39	IC MC74HC164N
ICA5	s	8-759-202-26	IC TC74HC138P

ICA6	s	8-759-007-10	IC MC74HC541N
ICA7	s	8-759-202-74	IC TC74HC04P
ICA8	s	8-759-916-10	IC SN74HC378N
ICA9	s	8-759-202-22	IC TC74HC74P
ICA10	s	8-759-202-22	IC TC74HC74P

ICB1	s	8-759-202-34	IC TC74HC257P
ICB2	s	8-759-202-34	IC TC74HC257P
ICB3	s	8-759-001-39	IC MC74HC164N
ICB4	s	8-759-903-85	IC SN74LS385N
ICB5	s	8-759-202-26	IC TC74HC138P

ICB6	s	8-759-202-14	IC TC74HC08P
ICB7	s	8-759-202-11	IC TC74HC00P
ICB8	s	8-759-202-74	IC TC74HC04P
ICB9	s	8-759-202-22	IC TC74HC74P
ICB10	s	8-759-203-01	IC TC74HC175P

ICC1	s	8-759-202-34	IC TC74HC257P
ICC2	s	8-759-202-34	IC TC74HC257P
ICC3	s	8-759-203-21	IC TC74HC273P
ICC4	s	8-759-203-52	IC TC74HC595P
ICC5	s	8-759-202-56	IC TC74HC245P

ICC6	s	8-759-202-56	IC TC74HC245P
ICC7	s	8-759-007-10	IC MC74HC541N
ICC8	s	8-759-202-22	IC TC74HC74P
ICC9	s	8-759-202-22	IC TC74HC74P
ICC10	s	8-759-202-21	IC TC74HC32P

ICD1	s	8-759-202-34	IC TC74HC257P
ICD2	s	8-759-202-34	IC TC74HC257P
ICD3	s	8-759-203-21	IC TC74HC273P
ICD4	s	8-759-203-52	IC TC74HC595P
ICD5	s	8-759-203-50	IC TC74HC574P

ICD6	s	8-759-203-50	IC TC74HC574P
ICD7	s	8-759-203-50	IC TC74HC574P
ICD8	s	8-759-203-50	IC TC74HC574P
ICD9	s	8-759-916-98	IC SN74HC377N
ICD10	s	8-759-202-93	IC TC74HC153P

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
ICE1	s	8-759-203-50	IC TC74HC574P
ICE2	s	8-759-203-50	IC TC74HC574P
ICE3	s	8-759-903-84	IC SN74LS384N
ICE4	s	8-759-903-84	IC SN74LS384N
ICE5	s	8-759-203-50	IC TC74HC574P
ICE6	s	8-759-203-50	IC TC74HC574P
ICE7	s	8-759-203-50	IC TC74HC574P
ICE8	s	8-759-203-50	IC TC74HC574P
ICE9	s	8-759-916-98	IC SN74HC377N
ICE10	s	8-759-750-16	IC MB7128E
ICF1	s	8-759-203-50	IC TC74HC574P
ICF2	s	8-759-203-50	IC TC74HC574P
ICF3	s	8-759-903-84	IC SN74LS384N
ICF4	s	8-759-903-84	IC SN74LS384N
ICF5	s	8-759-203-24	IC TC74HC283P
ICF6	s	8-759-202-32	IC TC74HC163P
ICE7	s	8-759-916-98	IC SN74HC377N
ICF10	s	8-759-202-32	IC TC74HC163P
IOG1	s	8-759-207-98	IC TC511000P-10
IOG2	s	8-759-207-98	IC TC511000P-10
IOG3	s	8-759-207-98	IC TC511000P-10
IOG4	s	8-759-207-98	IC TC511000P-10
IOG5	s	8-759-203-24	IC TC74HC283P
IOG6	s	8-759-202-32	IC TC74HC163P
IOG7	s	8-759-916-98	IC SN74HC377N
IOG9	s	8-759-107-52	IC CXQ71054P
IOG10	s	8-759-202-32	IC TC74HC163P
IGH1	s	8-759-207-98	IC TC511000P-10
IGH2	s	8-759-207-98	IC TC511000P-10
IGH3	s	8-759-207-98	IC TC511000P-10
IGH4	s	8-759-207-98	IC TC511000P-10
IGH5	s	8-759-203-24	IC TC74HC283P
IGH6	s	8-759-202-32	IC TC74HC163P
IGH7	s	8-759-007-10	IC MC74HC541N
IGH8	s	8-759-203-50	IC TC74HC574P
IGH9	s	8-759-203-50	IC TC74HC574P
IGH10	s	8-759-746-60	IC TBP28L42N
ICJ1	s	8-759-207-98	IC TC511000P-10
ICJ2	s	8-759-207-98	IC TC511000P-10
ICJ3	s	8-759-207-98	IC TC511000P-10
ICJ4	s	8-759-207-98	IC TC511000P-10
ICJ5	s	8-759-203-24	IC TC74HC283P
ICJ6	s	8-759-202-32	IC TC74HC283P
ICJ7	s	8-759-007-10	IC MC74HC541N
ICJ8	s	8-759-916-98	IC SN74HC377N
ICJ9	s	8-759-203-50	IC TC74HC574P
ICJ10	s	8-759-746-60	IC TBP28L42N
ICK1	s	8-759-207-98	IC TC511000P-10
ICK2	s	8-759-207-98	IC TC511000P-10
ICK3	s	8-759-207-98	IC TC511000P-10
ICK4	s	8-759-207-98	IC TC511000P-10
ICK5	s	8-759-203-24	IC TC74HC283P
ICK6	s	8-759-202-32	IC TC74HC163P
ICK7	s	8-759-001-39	IC MC74HC164N
ICK8	s	8-759-202-32	IC TC74HC163P
ICK9	s	8-759-202-24	IC TC74HC86P
ICK10	s	8-759-202-84	IC TC74HC109P
ICL1	s	8-759-202-74	IC TC74HC04P
ICL2	s	8-759-202-27	IC TC74HC157P
ICL3	s	8-759-202-27	IC TC74HC157P
ICL4	s	8-759-203-21	IC TC74HC273P
ICL6	s	8-759-901-89	IC SN74LS189AN
ICL7	s	8-759-901-89	IC SN74LS189AN
ICL8	s	8-759-203-43	IC TC74HC534P
ICL9	s	8-759-202-11	IC TC74HC00P
ICL10	s	8-759-202-14	IC TC74HC08P

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
ICM1	s	8-759-202-22	IC TC74HC74P
ICM2	s	8-759-202-27	IC TC74HC157P
ICM3	s	8-759-004-84	IC MC74HC597N
ICM4	s	8-759-004-84	IC MC74HC597N
ICM5	s	8-759-746-95	IC MBM27C256-20
ICM9	s	8-759-202-27	IC TC74HC157P
ICM10	s	8-759-202-74	IC TC74HC04P
RB1	s	1-235-005-00	RESISTOR BLOCK 47K
to 6			
RB7	s	1-235-005-00	RESISTOR BLOCK 47K
RB8	s	1-235-005-00	RESISTOR BLOCK 47K
RB9	s	1-231-385-00	RESISTOR BLOCK 4.7K
RB10	s	1-231-385-00	RESISTOR BLOCK 4.7K
RB11	s	1-231-549-11	RESISTOR BLOCK 47Kx4
SW1	s	1-553-252-00	SWITCH, ROTARY
HP-31 BOARD			
-	o	A-7850-488-A	MOUNTED PCB, HP-31
(This assembly includes the following parts.)			
-	s	7-682-647-09	SCREW +PSW 3x6
C1	s	1-124-282-00	CAP, ELECT NONPOLAR 22 20% 25V
C2	s	1-124-038-00	CAP, ELECT 1.0 20% 50V
C3	s	1-102-112-00	CAP, CERAMIC 330P 10% 50V
C4	s	1-124-126-00	CAP, ELECT 47 20% 25V
C5	s	1-124-126-00	CAP, ELECT 47 20% 25V
C6	s	1-124-282-00	CAP, ELECT NONPOLAR 22 20% 25V
C7	s	1-124-786-11	CAP, ELECT 22 20% 35V
C8	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C9	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C10	s	1-124-786-11	CAP, ELECT 22 20% 35V
C11	s	1-124-282-00	CAP, ELECT NONPOLAR 22 20% 25V
C12	s	1-124-038-00	CAP, ELECT 1.0 20% 50V
C13	s	1-102-112-00	CAP, CERAMIC 330P 10% 50V
C14	s	1-124-126-00	CAP, ELECT 47 20% 25V
C15	s	1-124-126-00	CAP, ELECT 47 20% 25V
C16	s	1-124-282-00	CAP, ELECT NONPOLAR 22 20% 25V
GN309	o	1-560-369-00	CONNECTOR POST HEADER, ILG (8P)
IC1	s	8-759-745-63	IC NJM4560D-X
JK1	s	1-507-931-11	JACK, LARGE TYPE
Q1	s	8-729-281-52	TRANSISTOR 2SC1815-Y
Q2	s	8-729-306-92	TRANSISTOR
Q3	s	8-729-304-92	TRANSISTOR 2SB649-C
Q11	s	8-729-281-52	TRANSISTOR 2SC1815-Y
Q12	s	8-729-306-92	TRANSISTOR
Q13	s	8-729-304-92	TRANSISTOR 2SB649-C
R3	s	1-215-440-00	RES, METAL 6.2K 1% 1/6W
R11	s	1-247-735-11	RES, CARBON 47 5% 1/2W
R23	s	1-215-440-00	RES, METAL 6.2K 1% 1/6W
R31	s	1-247-735-11	RES, CARBON 47 5% 1/2W
RV1	s	1-237-671-11	RES, VAR, CARBON 10K/10V

F-151, IF-152

Ref. No.	SP	Parts No.	Description
IF-151 BOARD			
-	o	A-7850-485-A	MOUNTED PCB, IF-151 (This assembly includes the following parts.)
-	o	3-621-124-00	SPACER
-	s	1-561-832-00	SOCKET, SHORT
C1 to 13	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C14 to 19	s	1-124-126-00	CAP, ELECT 47 20% 25V
C20 to 30	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C31	s	1-123-356-00	CAP, ELECT 10 20% 50V
C32 to 43	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C44	s	1-123-321-00	CAP, ELECT 220 20% 16V
C45 to 52	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C53	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
C54	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
C55	s	1-161-485-00	CAP, CERAMIC 0.1 50V
CN445	o	1-560-361-00	CONNECTOR POST HEADER, ILG (8P)
CN910	o	1-560-358-00	CONNECTOR POST HEADER, ILG (4P)
D1	s	8-719-911-19	DIODE 1SS119
IC1	s	8-759-000-99	IC MC74HC74N
ICA2	s	8-759-946-14	IC MS6130L-70P
ICA4	s	8-759-202-56	IC TC74HC245P
ICB4	s	8-759-202-56	IC TC74HC245P
ICC1	s	8-759-202-89	IC TC74HC139P
ICC2	s	8-759-902-94	IC SN74LS590N
ICC3	s	8-759-902-94	IC SN74LS590N
ICD1	s	8-759-203-33	IC TC74HC367P
ICD2	s	8-759-202-26	IC TC74HC138P
ICD3	s	8-759-202-26	IC TC74HC138P
ICD4	s	8-759-202-11	IC TC74HC00P
ICD5	s	8-759-202-14	IC TC74HC08P
ICE2	s	8-759-007-09	IC MC74HC540N
ICE3	s	8-759-202-74	IC TC74HC04P
ICE4	s	8-759-202-26	IC TC74HC138P
ICE5	s	8-759-202-21	IC TC74HC32P
ICE7	s	8-759-202-74	IC TC74HC04P
ICF1	s	8-759-208-40	IC TMP284C00AP-6
ICF3	s	8-759-744-04	IC PCM34021FF3V2.0
ICF5	s	8-759-300-63	IC HM6264LP-15
ICF6	s	8-759-202-78	IC TC74HC51P
ICG4	s	8-759-202-17	IC TC74HC14P
ICG5	s	8-759-202-21	IC TC74HC32P
ICG6	s	8-759-202-21	IC TC74HC32P
ICH1	s	8-759-208-42	IC TMP284C40AP-6
ICH3	s	8-759-208-41	IC TMP284C30AP-6
ICH4	s	8-759-202-89	IC TC74HC139P
ICH6	s	8-759-000-99	IC MC74HC74N
ICJ2	s	8-759-203-33	IC TC74HC367P
ICJ3	s	8-759-203-50	IC TC74HC574P
ICJ4	s	8-759-202-26	IC TC74HC138P
ICJ6	s	8-759-202-86	IC TC74HC123P

Ref. No.	SP	Parts No.	Description
ICK1	s	8-759-938-75	IC MAX232CPE
ICK2	s	8-759-203-48	IC TC74HC573P
ICK3	s	8-759-007-09	IC MC74HC540N
ICK4	s	8-759-000-99	IC MC74HC74N
ICK5	s	8-759-000-99	IC MC74HC74N
ICK6	s	8-759-202-74	IC TC74HC04P
ICL1	s	8-759-938-75	IC MAX232CPE
ICL2	s	8-759-203-48	IC TC74HC573P
ICL3	s	8-759-007-09	IC MC74HC74N
ICL5	s	8-759-202-32	IC TC74HC163P
ICL6	s	8-759-202-74	IC TC74HC04P
ICM2	s	8-759-908-36	IC SN74LS31N
ICM5	s	8-759-203-40	IC TC74HC393P
R9	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
RB1	s	1-235-005-00	RESISTOR BLOCK 47K
RB2	s	1-231-410-00	RESISTOR BLOCK 10K
RB3	s	1-231-385-00	RESISTOR BLOCK 4.7K
RB4	s	1-231-410-00	RESISTOR BLOCK 10K
RB5	s	1-235-005-00	RESISTOR BLOCK 47K
RB6	s	1-235-005-00	RESISTOR BLOCK 47K
RB7	s	1-231-410-00	RESISTOR BLOCK 10K
RB8	s	1-231-410-00	RESISTOR BLOCK 10K
RB9	s	1-231-385-00	RESISTOR BLOCK 4.7K
SW1	s	1-570-623-11	SWITCH, DIP
X1	s	1-527-847-00	OSCILLATOR, CRYSTAL
IF-152 BOARD			
-	o	A-7850-500-A	MOUNTED PCB, IF-152 (This assembly includes the following parts.)
-	s	1-532-824-11	FUSE, GLASS TUBE
-	s	1-533-189-11	HOLDER, FUSE
C1 to 6	s	1-102-942-00	CAP, CERAMIC 5P 5% 50V
C10	s	1-162-851-11	CAP, CERAMIC 0.1 10% 16V
C11	s	1-162-851-11	CAP, CERAMIC 0.1 10% 16V
CN801	s	1-561-899-00	CONNECTOR SOCKET, MINI 50P
CN802	s	1-561-655-00	CONNECTOR SOCKET, MINI 9P
CN803	s	1-561-655-00	CONNECTOR SOCKET, MINI 9P
D1 to 18	s	8-719-911-19	DIODE 1SS119
D19 to 24	s	8-759-107-45	IC UPA54HA
D25	s	8-719-911-19	DIODE 1SS119
D26	s	8-719-911-19	DIODE 1SS119
IC1	s	8-759-926-30	IC AM26LS30PC
IC2	s	T-911-163-21	IC MC3486P
IC3	s	8-759-926-30	IC AM26LS30PC
IC6 to 21	s	8-719-902-56	DIODE PC817
IC4	s	8-719-933-26	IC PC910
IC5	s	8-719-933-26	IC PC910
Q1	s	8-729-366-72	TRANSISTOR 2SD667-C
Q2 to 20	s	8-729-281-53	TRANSISTOR 2SC1815-GR
RL1	s	1-515-608-11	RELAY
RL2	s	1-515-608-11	RELAY

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
IF-153 BOARD			
-	o	A-7850-493-A	COMPLETE PCB, IF-153 (This assembly includes the following parts.)
C1	s	1-102-973-00	CAP, CERAMIC 100P 5% 50V
C2	s	1-161-485-00	CAP, CERAMIC 0.1 50V to 4
C6	s	1-161-485-00	CAP, CERAMIC 0.1 50V to 8
C9	s	1-161-900-11	CAP, CERAMIC 1 50V
C10	s	1-102-973-00	CAP, CERAMIC 100P 5% 50V
C11	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C12	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C13	s	1-161-900-11	CAP, CERAMIC 1 50V
C14	s	1-161-900-11	CAP, CERAMIC 1 50V
C15	s	1-102-973-00	CAP, CERAMIC 100P 5% 50V
C16	s	1-102-973-00	CAP, CERAMIC 100P 5% 50V
C17	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C18	s	1-102-973-00	CAP, CERAMIC 100P 5% 50V
C19	s	1-161-485-00	CAP, CERAMIC 0.1 50V to 40
C41	s	1-104-113-00	CAP, STYROL 820P 10% 50V
C42	s	1-131-367-00	CAP, TANTALUM ELECT 22 20V
C43	s	1-161-485-00	CAP, CERAMIC 0.1 50V to 62
C63	s	1-161-900-11	CAP, CERAMIC 1 50V
C64	s	1-104-113-00	CAP, STYROL 820P 10% 50V
C65	s	1-131-367-00	CAP, TANTALUM ELECT 22 20V
C66	s	1-124-471-00	CAP, ELECT 1000 20% 6.3V
C67	s	1-124-479-11	CAP, ELECT 330 20% 25V
C68	s	1-124-479-11	CAP, ELECT 330 20% 25V
CN451	o	1-560-360-00	CONNECTOR POST HEADER, ILG (6P)
CN908	o	1-560-359-00	CONNECTOR POST HEADER, ILG (5P)
D1	s	8-719-911-19	DIODE 1SS119
IC1	s	8-759-981-00	IC TL081CP
IC3	s	8-759-131-11	IC UPC311C
IC4	s	8-759-990-82	IC TL082CP
IC5	s	8-759-981-00	IC TL081CP
IC6	s	8-759-131-11	IC UPC311C
ICA4	s	8-759-202-93	IC TC74HC153P
ICA5	s	8-759-202-93	IC TC74HC153P
ICB4	s	8-759-203-30	IC TC74HC365P
ICB5	s	8-759-340-46	IC HD14046BP
ICB6	s	8-759-202-93	IC TC74HC153P
ICB7	s	8-759-202-74	IC TC74HC04P
ICB8	s	8-759-909-72	IC CX-7912A
ICB11	s	8-759-909-72	IC CX-7912A
ICC1	s	8-759-007-10	IC MC74HC541N
ICC2	s	8-759-202-26	IC TC74HC138P
ICC3	s	8-759-202-26	IC TC74HC138P
ICC4	s	8-759-202-89	IC TC74HC139P
ICC5	s	8-759-340-46	IC HD14046BP
ICC6	s	8-759-203-50	IC TC74HC574P
ICC7	s	8-759-203-50	IC TC74HC574P
ICC8	s	8-759-901-89	IC SN74LS189AN
ICC9	s	8-759-901-89	IC SN74LS189AN
ICC10	s	8-759-202-21	IC TC74HC32P
ICC11	s	8-759-202-86	IC TC74HC123P

Ref. No.	SP	Parts No.	Description
ICD1	s	8-759-202-56	IC TC74HC245P
ICD2	s	8-759-203-50	IC TC74HC574P
ICD3	s	8-759-203-50	IC TC74HC574P
ICD4	s	8-759-107-52	IC CXQ71054P
ICD6	s	8-759-107-52	IC CXQ71054P
ICD7	s	8-759-001-42	IC MC74HC174N
ICD8	s	8-759-202-55	IC TC74HC244P
ICD9	s	8-759-202-55	IC TC74HC244P
ICD10	s	8-759-007-10	IC MC74HC541N
ICD11	s	8-759-202-86	IC TC74HC123P
ICE1	s	8-759-203-30	IC TC74HC365P
ICE2	s	8-759-202-93	IC TC74HC153P
ICE3	s	8-759-202-93	IC TC74HC153P
ICE4	s	8-759-202-93	IC TC74HC153P
ICE5	s	8-759-202-93	IC TC74HC153P
ICE6	s	8-759-001-42	IC MC74HC174N
Q2	s	8-729-281-53	TRANSISTOR 2SC1815-GR
R11	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
R22	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R24	s	1-247-887-00	RES, CARBON 220K 5% 1/4W
R31	s	1-247-885-00	RES, CARBON 180K 5% 1/4W
R36	s	1-247-885-00	RES, CARBON 180K 5% 1/4W
R49	s	1-249-447-11	RES, CARBON 1 5% 1/4W
R50	s	1-249-447-11	RES, CARBON 1 5% 1/4W
RB1	s	1-235-005-00	RESISTOR BLOCK 47K
RB2	s	1-235-005-00	RESISTOR BLOCK 47K
RB3	s	1-235-005-00	RESISTOR BLOCK 47K
RV1	s	1-230-842-11	RES, ADJ, METAL 5K
RY1	s	1-515-608-11	RELAY

KC-15 BOARD			
-	o	A-7850-504-A	MOUNTED PCB, KC-15 (This assembly includes the following parts.)
C1	s	1-123-661-00	CAP, ELECT 100 20% 6.3V
C24	s	1-124-138-00	CAP, ELECT 3300 20% 6.3V
C28	s	1-123-661-00	CAP, ELECT 100 20% 6.3V
C29	s	1-123-661-00	CAP, ELECT 100 20% 6.3V
C32	s	1-124-138-00	CAP, ELECT 3300 20% 6.3V
C33	s	1-161-900-00	CAP, CERAMIC 1 50V
CN422	o	1-559-231-11	CABLE ASSY, KC FLAT
CN427	o	1-559-231-11	CABLE ASSY, KC FLAT
CN428	o	1-560-358-00	CONNECTOR POST HEADER, ILG (4P)
CN911	o	1-560-357-00	CONNECTOR POST HEADER, ILG (3P)
ICB1	s	8-759-202-18	IC TC74HC20P
ICB2	s	8-759-203-48	IC TC74HC573P
ICB3	s	8-759-203-48	IC TC74HC573P
ICB4	s	8-759-000-99	IC MC74HC74N
ICB5	s	8-759-202-26	IC TC74HC138P
ICG1	s	8-759-202-24	IC TC74HC86P
ICG2	s	8-759-001-39	IC MC74HC164N
ICG5	s	8-759-202-26	IC TC74HC138P
ICD4	s	8-759-209-05	IC TMP82C79P-2
ICE2	s	8-759-203-48	IC TC74HC573P
ICE5	s	8-759-202-14	IC TC74HC08P
ICE6	s	8-759-203-40	IC TC74HC393P

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

IC-15, KEY-7, KSW-8, MA-24

Ref. NO.	SP	Parts No.	Description
ICF2	s	8-759-202-26	IC TC74HC138P
ICF4	s	8-759-209-05	IC TMP82C79P-2
ICF5	s	8-759-202-21	IC TC74HC32P
ICF6	s	8-759-202-74	IC TC74HC04P
IOG2	s	8-759-202-26	IC TC74HC138P
IOG4	s	8-759-202-56	IC TC74HC245P
IOG5	s	8-759-203-48	IC TC74HC573P
IOG6	s	8-759-202-21	IC TC74HC32P
L1	s	1-409-309-00	COIL, SN 72UH
Q1 to 14	s	8-729-206-56	TRANSISTOR 2SC3072-C
Q15	s	8-729-281-53	TRANSISTOR 2SC1815-GR
Q16 to 22	s	8-729-206-11	TRANSISTOR 2SA1244-Y
Q23 to 30	s	8-729-206-56	TRANSISTOR 2SC3072-C
Q31 to 46	s	8-729-206-11	TRANSISTOR 2SA1244-Y
Q47	s	8-729-281-53	TRANSISTOR 2SC1815-GR
Q48	s	8-729-281-53	TRANSISTOR 2SC1815-GR
RB1 to 4	s	1-235-005-00	RESISTOR BLOCK 47K

KEY-7 BOARD

- o 1-620-327-11 PC BOARD, KEY-7
(This assembly includes the following parts.)

-	o	4-920-573-01	FILM, PLAY BUTTON
-	o	4-920-574-01	FILM, STOP BUTTON
-	o	4-920-575-01	FILM, REC BUTTON
-	o	4-920-572-01	FILM, FFWD BUTTON

D1 to 7	s	8-719-911-19	DIODE 1SS119
R1	s	1-246-458-00	RES, CARBON 240 5% 1/4W
SW1	s	1-571-127-21	SWITCH
SW2	s	1-571-127-21	SWITCH
SW3	s	1-571-127-21	SWITCH
SW4	s	1-571-127-21	SWITCH
SW5	s	1-571-127-11	SWITCH
SW6	s	1-571-127-21	SWITCH
SW7	s	1-571-126-11	SWITCH

Ref. No.	SP	Parts No.	Description
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KSW-8 BOARD

- o A-7850-503-A MOUNTED PCB, KSW-8
(This assembly includes the following parts.)

D15 to 44	s	8-719-911-19	DIODE 1SS119
SW1 to 8	s	1-554-041-11	SWITCH, PUSH
SW9	s	1-570-212-91	SWITCH, PUSH
SW10	s	1-570-212-61	SWITCH, PUSH
SW11	s	1-570-212-31	SWITCH, PUSH
SW12	s	1-571-063-41	SWITCH, PUSH
SW13	s	1-571-063-91	SWITCH, PUSH
SW14	s	1-570-212-81	SWITCH, PUSH
SW15	s	1-570-212-51	SWITCH, PUSH
SW16	s	1-570-212-21	SWITCH, PUSH
SW17	s	1-570-214-21	SWITCH, PUSH
SW18	s	1-570-212-71	SWITCH, PUSH
SW19	s	1-570-212-41	SWITCH, PUSH
SW20	s	1-570-212-11	SWITCH, PUSH
SW21	s	1-571-063-31	SWITCH, PUSH
SW22	s	1-571-063-71	SWITCH, PUSH
SW23	s	1-571-063-21	SWITCH, PUSH
SW24	s	1-571-063-61	SWITCH, PUSH
SW25	s	1-554-041-11	SWITCH, PUSH
SW26	s	1-554-041-11	SWITCH, PUSH
SW27	s	1-571-063-81	SWITCH, PUSH
SW28	s	1-571-063-11	SWITCH, PUSH
SW29	s	1-571-063-51	SWITCH, PUSH
SW30	s	1-554-041-11	SWITCH, PUSH

MA-24 BOARD

- o A-7850-489-A MOUNTED PCB, MA-24
(This assembly includes the following parts.)

-	o	3-621-124-00	SPACER
C1	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C2	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C3	s	1-124-786-11	CAP, ELECT 22 20% 35V
C4	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C5	s	1-102-128-00	CAP, CERAMIC 0.0082 10% 50V
C6	s	1-124-786-11	CAP, ELECT 22 20% 35V
C7	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C8	s	1-136-169-00	CAP, METAL 0.22 5% 50V
C9	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C10	s	1-136-169-00	CAP, METAL 0.22 5% 50V
C11	s	1-124-786-11	CAP, ELECT 22 20% 35V
CN318	o	1-560-369-00	CONNECTOR POST HEADER, ILG (8P)
CN321	o	1-560-365-00	CONNECTOR POST HEADER, ILG (3P)
CN322	o	1-562-846-11	CONNECTOR 5P
D1	s	8-719-911-19	DIODE 1SS119
D2	s	8-719-911-19	DIODE 1SS119
D3	s	8-719-911-19	DIODE 1SS119
IC1	s	8-759-910-83	IC TL072ACP
IC2	s	8-759-112-38	IC UPCL238V
IC3	s	8-759-000-99	IC MC74HC74N
IC4	s	8-759-202-17	IC TC74HC14P

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
L1	s	1-409-309-00	COIL, SN 72UH
Q1	s	8-729-366-72	TRANSISTOR 2SD667-C
Q2	s	8-729-366-72	TRANSISTOR 2SD667-C
R5	s	1-247-688-11	RES, CARBON 10 5% 1/4W
R10	s	1-247-688-11	RES, CARBON 10 5% 1/4W
R11	s	1-214-803-00	RES, METAL 3 1% 1/2W
RL1	s	1-515-608-11	RELAY
RL2	s	1-515-608-11	RELAY
RV1	s	1-237-673-11	RES, VAR, CARBON 5K

MA-25 BOARD

- o 1-620-331-11 PC BOARD, MA-25
(This assembly includes the following parts.)

CN1	o	1-560-447-00	CONNECTOR (M) 5P
SW1	s	1-554-041-11	SWITCH, PUSH
SW2	s	1-554-041-11	SWITCH, PUSH

MB-143 BOARD

- o A-7850-501-A MOUNTED PCB, MB-143
(This assembly includes the following parts.)

CN18	o	1-560-360-00	CONNECTOR POST HEADER, ILG (6P)
CN901	o	1-560-723-00	CONNECTOR, PC BOARD 3P
CN902	o	1-560-177-00	CONNECTOR 4P
CN903	o	1-560-177-00	CONNECTOR 4P
CN904	o	1-560-177-00	CONNECTOR 4P

MCK-1 BOARD

- o A-7850-470-A COMPLETE PCB, MCK-1
(This assembly includes the following parts.)

-	s	1-561-832-00	SOCKET, SHORT
-	s	2-251-622-11	LEVER, PC BOARD
C1	s	1-102-935-00	CAP, CERAMIC 2P 50V
C2	s	1-102-935-00	CAP, CERAMIC 2P 50V
C3	s	1-102-937-00	CAP, CERAMIC 4P 50V
C4	s	1-123-333-00	CAP, ELECT 100 20% 25V
C5	s	1-161-900-11	CAP, CERAMIC 1 50V
C6	s	1-104-065-00	CAP, STYROL 330P 5% 50V
C7	s	1-104-077-00	CAP, STYROL 0.001 5% 50V
C8	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C9	s	1-102-820-00	CAP, CERAMIC 330P 5% 50V
to 11			

Ref. No.	SP	Parts No.	Description
C12	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
to 14			
C15	s	1-108-794-71	CAP, FILM 1500p 5% 50V
C16	s	1-101-880-00	CAP, CERAMIC 47P 5% 50V
C17	s	1-161-900-11	CAP, CERAMIC 1 50V
C18	s	1-102-116-00	CAP, CERAMIC 680P 10% 50V
C19	s	1-161-900-11	CAP, CERAMIC 1 50V
C20	s	1-136-177-00	CAP, METAL 1 5% 50V
C21	s	1-102-820-00	CAP, CERAMIC 330P 5% 50V
C22	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
C23	s	1-102-820-00	CAP, CERAMIC 330P 5% 50V
C24	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
C25	s	1-102-820-00	CAP, CERAMIC 330P 5% 50V
C26	s	1-102-963-00	CAP, CERAMIC 33P 5% 50V
C27	s	1-161-900-11	CAP, CERAMIC 1 50V
C29	s	1-136-177-00	CAP, METAL 1 5% 50V
C31	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C32	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C33	s	1-161-900-11	CAP, CERAMIC 1 50V
C34	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C35	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C72	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C73	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C82	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C83	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C92	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C93	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C94	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C95	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C104	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C105	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C140	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C141	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C142	s	1-124-477-11	CAP, ELECT 47 20% 25V
C143	s	1-124-479-11	CAP, ELECT 330 20% 25V
C144	s	1-124-479-11	CAP, ELECT 330 20% 25V
C145	s	1-124-471-00	CAP, ELECT 1000 20% 6.3V
C146	s	1-124-471-00	CAP, ELECT 1000 20% 6.3V
D1	s	8-719-921-20	DIODE 1SS119TD
to 6			
D7	s	8-719-949-33	DIODE FC53M-4
to 12			
D13	s	8-719-921-20	DIODE 1SS119TD
D14	s	8-719-927-77	DIODE KV1230Z
D15	s	8-719-921-20	DIODE 1SS119TD
to 20			
IC1	s	8-759-981-00	IC TL081CP
IC2	s	8-759-131-11	IC UPC311C
IC3	s	8-759-990-84	IC TL084CN
IC4	s	8-759-990-82	IC TL082CP
IC5	s	8-759-990-82	IC TL082CP
IC7	s	8-759-202-11	IC TC74HC00P
IC8	s	8-759-202-11	IC TC74HC00P
ICA2	s	8-759-203-50	IC TC74HC574P
ICA3	s	8-759-203-50	IC TC74HC574P
ICA4	s	8-759-202-26	IC TC74HC138P
ICA5	s	8-759-202-26	IC TC74HC138P
ICA6	s	8-759-203-30	IC TC74HC365P
to 8			
ICB1	s	8-759-007-10	IC MC74HC541N
ICB2	s	8-759-007-10	IC MC74HC541N
ICB3	s	8-759-203-50	IC TC74HC574P
ICB4	s	8-759-203-50	IC TC74HC574P
ICB5	s	8-759-910-74	IC SN74874N

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. NO.	SP	Parts No.	Description
ICB6	s	8-759-202-11	IC TC74HC00P
ICB7	s	8-759-945-78	IC SN74ALS10AN
ICB8	s	8-759-203-01	IC TC74HC175P
ICB10	s	8-759-202-86	IC TC74HC123P
ICC1	s	8-759-007-10	IC MC74HC541N
ICC2	s	8-759-203-50	IC TC74HC574P
ICC3	s	8-759-203-50	IC TC74HC574P
ICC4	s	8-759-203-50	IC TC74HC574P
ICC5	s	8-759-001-16	IC MC10116L
ICC6	s	8-759-926-32	IC AM26LS32PC
ICC7	s	8-759-936-54	IC SN74ALS175N
ICC8	s	8-759-911-75	IC SN74LS175N
ICC10	s	8-759-202-12	IC TC74HC02P
ICD3	s	8-759-202-86	IC TC74HC123P
ICD4	s	8-759-202-11	IC TC74HC00P
ICD5	s	8-759-203-39	IC TC74HC390P
ICD6	s	8-759-301-05	IC HD10105
ICD8	s	8-759-776-41	IC TBP28L42N-MCK-D8
ICD9	s	8-759-202-76	IC TC74HC30P
ICD10	s	8-759-203-40	IC TC74HC393P
ICE3	s	8-759-203-40	IC TC74HC393P
ICE4	s	8-759-200-22	IC TC40H138P
ICE5	s	8-759-202-93	IC TC74HC153P
ICE6	s	8-759-001-35	IC MC10135L
ICE7	s	8-759-301-31	IC HD10131
ICE8	s	8-759-202-32	IC TC74HC163P
ICE9	s	8-759-904-18	IC SN74ALS00AN
ICE10	s	8-759-917-01	IC SN74HC379N
ICF3	s	8-759-202-86	IC TC74HC123P
ICF4	s	8-759-000-99	IC MC74HC74N
ICF6	s	8-759-301-05	IC HD10105
ICF7	s	8-759-300-26	IC HD10136
ICF8	s	8-759-202-32	IC TC74HC163P
ICF9	s	8-759-202-11	IC TC74HC00P
ICF10	s	8-759-202-32	IC TC74HC163P
ICG3	s	8-759-202-86	IC TC74HC123P
ICG4	s	8-759-202-11	IC TC74HC00P
ICG6	s	8-759-202-74	IC TC74HC04P
ICG7	s	8-759-926-32	IC AM26LS32PC
ICG8	s	8-759-202-32	IC TC74HC163P
ICG9	s	8-759-202-32	IC TC74HC163P
ICG10	s	8-759-202-15	IC TC74HC10P
ICH3	s	8-759-202-32	IC TC74HC163P
ICH4	s	8-759-202-32	IC TC74HC163P
ICH5	s	8-759-202-15	IC TC74HC10P
ICH6	s	8-759-203-50	IC TC74HC574P
ICH7	s	8-759-203-39	IC TC74HC390P
ICH8	s	8-759-300-26	IC HD10136
ICH9	s	8-759-300-26	IC HD10136
ICH10	s	8-759-300-26	IC HD10136
ICJ3	s	8-759-202-11	IC TC74HC00P
ICJ6	s	8-759-202-11	IC TC74HC00P
ICJ7	s	8-759-203-40	IC TC74HC393P
ICJ9	s	8-759-016-48	IC MC1648P
ICJ10	s	8-759-301-05	IC HD10105
ICK2	s	8-759-202-74	IC TC74HC04P
ICK3	s	8-759-202-15	IC TC74HC10P
ICK4	s	8-759-203-39	IC TC74HC390P
ICK5	s	8-759-000-99	IC MC74HC74N
ICK6	s	8-759-918-71	IC CX23065
ICK7	s	8-759-203-39	IC TC74HC390P
ICK8	s	8-759-000-99	IC MC74HC74N
ICK9	s	8-759-918-71	IC CX23065
ICK10	s	8-759-926-32	IC AM26LS32PC

Ref. No.	SP	Parts No.	Description
ICL1	s	8-759-220-00	IC TC40H000P
ICL4	s	8-759-220-00	IC TC40H000P
ICL5	s	8-759-202-74	IC TC74HC04P
ICL7	s	8-759-202-32	IC TC74HC163P
ICL8	s	8-759-202-74	IC TC74HC04P
ICL9	s	8-759-202-11	IC TC74HC00P
ICL10	s	8-759-202-11	IC TC74HC00P
L1	s	1-426-258-11	COIL, RF
L2	s	1-409-339-00	COIL, SN
Q1	s	8-729-281-53	TRANSISTOR 2SC1815GR
Q2	s	8-729-281-53	TRANSISTOR 2SC1815GR
Q3	s	8-729-201-53	TRANSISTOR 2SA1015-GR
Q4	s	8-729-281-53	TRANSISTOR 2SC1815GR
Q5	s	8-729-207-36	TRANSISTOR 2SJ105
to 9			
Q10	s	8-729-281-53	TRANSISTOR 2SC1815GR
Q11	s	8-729-124-08	TRANSISTOR 2SC2408
Q12	s	8-729-124-08	TRANSISTOR 2SC2408
Q13	s	8-729-205-88	TRANSISTOR 2SC3074-Y
Q14	s	8-729-206-12	TRANSISTOR 2SA1244-Y
Q15	s	8-729-281-53	TRANSISTOR 2SC1815GR
R11	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R16	s	1-215-462-00	RES, METAL 51K 1% 1/6W
R17	s	1-215-455-00	RES, METAL 27K 1% 1/6W
R18	s	1-215-452-00	RES, METAL 20K 1% 1/6W
R19	s	1-215-445-00	RES, METAL 10K 1% 1/6W
R22	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R23	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R29	s	1-215-463-00	RES, METAL 56K 1% 1/6W
to 31			
R32	s	1-214-971-00	RES, METAL 2M 1% 1/4W
to 34			
R39	s	1-247-895-00	RES, CARBON 470K 5% 1/4W
R44	s	1-215-463-00	RES, METAL 56K 1% 1/6W
to 46			
R47	s	1-214-509-00	RES, METAL 10 1% 1/8W
R48	s	1-214-971-00	RES, METAL 2M 1% 1/4W
R49	s	1-214-509-00	RES, METAL 10 1% 1/8W
R50	s	1-214-509-00	RES, METAL 10 1% 1/8W
R51	s	1-214-971-00	RES, METAL 2M 1% 1/4W
R52	s	1-214-509-00	RES, METAL 10 1% 1/8W
R53	s	1-214-509-00	RES, METAL 10 1% 1/8W
R54	s	1-214-971-00	RES, METAL 2M 1% 1/4W
R55	s	1-214-509-00	RES, METAL 10 1% 1/8W
R63	s	1-215-463-00	RES, METAL 56K 1% 1/6W
R111	s	1-215-452-00	RES, METAL 20K 1% 1/6W
to 113			
R115	s	1-249-447-11	RES, CARBON 1 5% 1/4W
R116	s	1-249-447-11	RES, CARBON 1 5% 1/4W
RB1	s	1-235-005-00	RESISTOR BLOCK 47K
to 6			
RV2	s	-230-844-11	RES, ADJ, METAL 20K
to 4			
S1	s	1-553-441-00	SWITCH, TOGGLE
S2	s	1-553-441-00	SWITCH, TOGGLE
S4	s	1-553-440-00	SWITCH, TOGGLE
S5	s	1-553-441-00	SWITCH, TOGGLE
S6	s	1-553-440-00	SWITCH, TOGGLE
S7	s	1-553-441-00	SWITCH, TOGGLE
S8	s	1-570-598-11	SWITCH, DIP
SW1	s	1-553-441-00	SWITCH, TOGGLE
to 6			

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
X1	s	1-567-851-11	VIBRATOR, CRYSTAL
X2	s	1-567-852-11	VIBRATOR, CRYSTAL
X3	s	1-567-853-11	VIBRATOR, CRYSTAL
X4	s	1-567-854-11	VIBRATOR, CRYSTAL
X5	s	1-567-855-11	VIBRATOR, CRYSTAL
X6	s	1-567-856-11	VIBRATOR, CRYSTAL

MDC-1 BOARD

o A-7850-499-A MOUNTED PCB, MDC-1
(This assembly includes the following parts.)

-	s	2-251-622-11	LEVER, PC BOARD
C17	s	1-123-333-00	CAP, ELECT 100 20% 25V
D1	s	8-719-812-44	DIODE TLY124
D2	s	8-719-812-44	DIODE TLO124
D3	s	8-719-812-41	DIODE TLR124
D4	s	8-719-812-44	DIODE TLY124
D5	s	8-719-812-43	DIODE TLG124A
D6	s	8-719-812-44	DIODE TLY124
D7	s	8-719-812-41	DIODE TLR124
ICA1	s	8-759-917-01	IC SN74HC379N
ICA2	s	8-759-917-01	IC SN74HC379N
ICA3	s	8-759-926-31	IC AM26LS31PC
ICA4	s	8-759-926-31	IC AM26LS31PC
ICA5	s	8-759-001-42	IC MC74HC174N
ICA6	s	8-759-203-21	IC TC74HC273P
ICA7	s	8-759-203-21	IC TC74HC273P
ICA8	s	8-759-776-42	IC TBP28L42N-MDC-A8
ICA9	s	8-759-773-78	IC TBP28L42N-MDC9A
ICA11	s	8-759-778-13	IC 27C256A-MDC-A11
ICB1	s	8-759-917-01	IC SN74HC379N
ICB2	s	8-759-917-01	IC SN74HC379N
ICB3	s	8-759-917-01	IC SN74HC379N
ICB4	s	8-759-202-74	IC TC74HC04P
ICB5	s	8-759-202-92	IC TC74HC151P
ICB6	s	8-759-001-42	IC MC74HC174N
ICB7	s	8-759-001-42	IC MC74HC174N
ICB8	s	8-759-203-21	IC TC74HC273P
ICB9	s	8-759-202-32	IC TC74HC163P
ICB11	s	8-759-778-14	IC 27C256A-MDC-B11
ICC1	s	8-759-776-43	IC TBP28L42N-MDC-C1
ICC2	s	8-759-202-11	IC TC74HC00P
ICC3	s	8-759-203-36	IC TC74HC374P
ICC4	s	8-759-933-89	IC MB8167A-55P
ICC5	s	8-759-007-41	IC MCM6147P55
ICC6	s	8-759-001-42	IC MC74HC174N
ICC7	s	8-759-203-24	IC TC74HC283P
ICC8	s	8-759-202-32	IC TC74HC163P
ICC9	s	8-759-202-32	IC TC74HC163P
ICD2	s	8-759-202-21	IC TC74HC32P
ICD3	s	8-759-001-42	IC MC74HC174N
ICD4	s	8-759-202-32	IC TC74HC163P
ICD5	s	8-759-202-32	IC TC74HC163P
ICD6	s	8-759-202-32	IC TC74HC163P
ICD7	s	8-759-203-24	IC TC74HC283P
ICD8	s	8-759-202-32	IC TC74HC163P
ICD9	s	8-759-202-32	IC TC74HC163P
ICD11	s	8-759-778-15	IC 27C256A-MDC-D11

Ref. No.	SP	Parts No.	Description
ICE1	s	8-759-917-01	IC SN74HC379N
ICE2	s	8-759-917-01	IC SN74HC379N
ICE3	s	8-759-001-42	IC MC74HC174N
ICE4	s	8-759-202-32	IC TC74HC163P
ICE5	s	8-759-202-34	IC TC74HC257P
ICE6	s	8-759-202-32	IC TC74HC163P
ICE7	s	8-759-203-24	IC TC74HC283P
ICE8	s	8-759-202-32	IC TC74HC163P
ICE10	s	8-759-202-74	IC TC74HC04P
ICE11	s	8-759-202-32	IC TC74HC163P
ICF1	s	8-759-917-01	IC SN74HC379N
ICF3	s	8-759-203-33	IC TC74HC367P
ICF4	s	8-759-202-16	IC TC74HC11P
ICF5	s	8-759-202-93	IC TC74HC153P
ICF6	s	8-759-202-93	IC TC74HC153P
ICF7	s	8-759-202-12	IC TC74HC02P
ICF8	s	8-759-202-74	IC TC74HC04P
ICF9	s	8-759-001-42	IC MC74HC174N
ICF10	s	8-759-202-14	IC TC74HC08P
ICF11	s	8-759-000-99	IC MC74HC74N
ICH1	s	8-759-202-24	IC TC74HC86P
ICH2	s	8-759-202-14	IC TC74HC08P
ICH3	s	8-759-202-27	IC TC74HC157P
ICH4	s	8-759-914-39	IC MBM2114A-10LP
ICH5	s	8-759-203-21	IC TC74HC273P
ICH6	s	8-759-007-41	IC MCM6147P55
ICH7	s	8-759-202-32	IC TC74HC163P
ICH8	s	8-759-202-32	IC TC74HC163P
ICH9	s	8-759-202-11	IC TC74HC00P
ICH10	s	8-759-202-11	IC TC74HC00P
ICH11	s	8-759-202-14	IC TC74HC08P
ICJ1	s	8-759-001-42	IC MC74HC174N
ICJ2	s	8-759-202-74	IC TC74HC04P
ICJ3	s	8-759-202-27	IC TC74HC157P
ICJ4	s	8-759-202-76	IC TC74HC30P
ICJ5	s	8-759-203-24	IC TC74HC283P
ICJ6	s	8-759-202-24	IC TC74HC86P
ICJ7	s	8-759-917-01	IC SN74HC379N
ICJ8	s	8-759-202-11	IC TC74HC00P
ICJ9	s	8-759-202-32	IC TC74HC163P
ICJ10	s	8-759-202-32	IC TC74HC163P
ICJ11	s	8-759-202-32	IC TC74HC163P
ICK1	s	8-759-004-63	IC MC74HC125N
ICK2	s	8-759-202-11	IC TC74HC00P
ICK3	s	8-759-202-32	IC TC74HC163P
ICK4	s	8-759-202-11	IC TC74HC00P
ICK5	s	8-759-202-34	IC TC74HC257P
ICK6	s	8-759-202-14	IC TC74HC08P
ICK7	s	8-759-202-74	IC TC74HC04P
ICK8	s	8-759-202-84	IC TC74HC109P
ICK9	s	8-759-202-84	IC TC74HC109P
ICK10	s	8-759-202-32	IC TC74HC163P
ICK11	s	8-759-202-32	IC TC74HC163P
ICL1	s	8-759-914-39	IC MBM2114A-10LP
ICL2	s	8-759-203-01	IC TC74HC175P
ICL3	s	8-759-007-41	IC MCM6147P55
ICL4	s	8-759-914-39	IC MBM2114A-10LP
ICL5	s	8-759-914-39	IC MBM2114A-10LP
ICL6	s	8-759-914-39	IC MBM2114A-10LP
ICL7	s	8-759-202-32	IC TC74HC163P
ICL8	s	8-759-202-84	IC TC74HC109P
ICL9	s	8-759-202-20	IC TC74HC27P
ICL10	s	8-759-773-77	IC TBP28L42N-MDC10L
ICL11	s	8-759-773-76	IC TBP28L42N-MDC11L
ICM1	s	8-759-202-32	IC TC74HC163P
ICM2	s	8-759-202-32	IC TC74HC163P
ICM3	s	8-759-202-32	IC TC74HC163P
ICM4	s	8-759-202-32	IC TC74HC163P
ICM5	s	8-759-001-42	IC MC74HC174N

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
ICM6	s	8-759-776-79	IC MB7114L-MDC-M6
ICM7	s	8-759-202-89	IC TC74HC139P
ICM8	s	8-759-001-39	IC MC74HC164N
ICM9	s	8-759-001-39	IC MC74HC164N
ICM10	s	8-759-202-15	IC TC74HC10P
ICM11	s	8-759-202-32	IC TC74HC163P
ICN1	s	8-759-202-86	IC TC74HC123P
ICN2	s	8-759-202-86	IC TC74HC123P
ICN3	s	8-759-202-86	IC TC74HC123P
ICN4	s	8-759-202-32	IC TC74HC163P
ICN5	s	8-759-202-32	IC TC74HC163P
ICN6	s	8-759-202-74	IC TC74HC04P
ICN7	s	8-759-001-39	IC MC74HC164N
ICN8	s	8-759-001-39	IC MC74HC164N
ICN9	s	8-759-000-99	IC MC74HC74N
ICN10	s	8-759-776-80	IC MB7114L-MDC-N10
ICN11	s	8-759-001-42	IC MC74HC174N
RI to 6	s	1-247-883-00	RES, CARBON 150K 5% 1/4W
RB1	s	1-235-005-00	RESISTOR BLOCK 47K
RB2	s	1-235-005-00	RESISTOR BLOCK 47K
RB3	s	1-231-399-00	RESISTOR BLOCK 330

MDM-2 BOARD

- o A-7850-498-A MOUNTED PCB, MDM-2
(This assembly includes the following parts.)

-	s	2-251-622-11	LEVER, PC BOARD
C1	s	1-123-333-00	CAP, ELECT 100 20% 25V
DL1	s	1-415-167-00	DELAY LINE
ICA3	s	8-759-916-98	IC SN74HC377N
ICA4	s	8-759-202-27	IC TC74HC157P
ICA5	s	8-759-202-27	IC TC74HC157P
ICA6	s	8-759-203-21	IC TC74HC273P
ICA7	s	8-759-001-42	IC MC74HC174N
ICA8	s	8-759-001-42	IC MC74HC174N
ICA9	s	8-759-202-21	IC TC74HC32P
ICA10	s	8-759-203-30	IC TC74HC365P
ICA11	s	8-759-917-01	IC SN74HC379N
ICB3	s	8-759-916-98	IC SN74HC377N
ICB4	s	8-759-202-27	IC TC74HC157P
ICB5	s	8-759-202-27	IC TC74HC157P
ICB6	s	8-759-203-21	IC TC74HC273P
ICB7	s	8-759-001-42	IC MC74HC174N
ICB8	s	8-759-001-42	IC MC74HC174N
ICB9	s	8-759-202-11	IC TC74HC00P
ICB10	s	8-759-000-99	IC MC74HC74N
ICB11	s	8-759-202-74	IC TC74HC04P
ICC2	s	8-759-202-20	IC TC74HC27P
ICC3	s	8-759-202-20	IC TC74HC27P
ICC4	s	8-759-202-76	IC TC74HC30P
ICC6	s	8-759-776-53	IC MB7112L-MDM-C6
ICC7	s	8-759-001-33	IC MC74HC158N
ICC8	s	8-759-001-33	IC MC74HC158N
ICC9	s	8-759-000-99	IC MC74HC74N
ICC11	s	8-759-202-32	IC TC74HC163P
ICD2 to 5	s	8-759-202-24	IC TC74HC86P

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
ICD6	s	8-759-202-15	IC TC74HC10P
ICD7	s	8-759-202-18	IC TC74HC20P
ICD8	s	8-759-202-82	IC TC74HC85P
ICD9	s	8-759-906-69	IC SN74LS669N
ICD10	s	8-759-202-74	IC TC74HC04P
ICD11	s	8-759-000-99	IC MC74HC74N
ICE1	s	8-759-004-63	IC MC74HC125N
ICE2 to 5	s	8-759-202-14	IC TC74HC08P
ICE6	s	8-759-202-12	IC TC74HC02P
ICE7	s	8-759-202-93	IC TC74HC153P
ICE8	s	8-759-202-74	IC TC74HC04P
ICE9	s	8-759-202-27	IC TC74HC157P
ICE10	s	8-759-202-27	IC TC74HC157P
ICE11	s	8-759-916-99	IC SN74HC378N
ICF1	s	8-759-203-36	IC TC74HC374P
ICF2	s	8-759-203-36	IC TC74HC374P
ICF3	s	8-759-202-55	IC TC74HC244P
ICF4	s	8-759-202-55	IC TC74HC244P
ICF5 to 8	s	8-759-922-42	IC MR81464-12
ICF9	s	8-759-203-21	IC TC74HC273P
ICF10	s	8-759-202-27	IC TC74HC157P
ICF11	s	8-759-916-99	IC SN74HC378N
ICH2	s	8-759-202-93	IC TC74HC153P
ICH3	s	8-759-001-42	IC MC74HC174N
ICH4	s	8-759-916-99	IC SN74HC378N
ICH5	s	8-759-004-72	IC MC74HC259N
ICH6	s	8-759-202-14	IC TC74HC08P
ICH7	s	8-759-202-14	IC TC74HC08P
ICH9	s	8-759-909-62	IC MB8264A-15P
ICH10	s	8-759-001-33	IC MC74HC158N
ICH11	s	8-759-001-33	IC MC74HC158N
ICJ1 to 8	s	8-759-913-17	IC CX23021
ICJ9	s	8-759-776-54	IC MB7112L-MDM-J9
ICJ11	s	8-759-001-39	IC MC74HC164N
ICK1 to 4	s	8-759-916-98	IC SN74HC377N
ICK5	s	8-759-203-36	IC TC74HC374P
ICK6	s	8-759-203-36	IC TC74HC374P
ICK7	s	8-759-001-42	IC MC74HC174N
ICK8 to 11	s	8-759-202-98	IC TC74HC166P
ICL1 to 4	s	8-759-202-27	IC TC74HC157P
ICL5	s	8-759-202-55	IC TC74HC244P
ICL6	s	8-759-202-55	IC TC74HC244P
ICL7	s	8-759-001-42	IC MC74HC174N
ICL8 to 11	s	8-759-202-98	IC TC74HC166P
ICM1 to 4	s	8-759-202-24	IC TC74HC86P
ICM5 to 8	s	8-759-922-42	IC MR81464-12
ICM9	s	8-759-202-27	IC TC74HC157P
ICM10	s	8-759-202-27	IC TC74HC157P
ICM11	s	8-759-203-21	IC TC74HC273P
RB1 to 8	s	1-235-005-00	RESISTOR BLOCK 47K

Ref. No.	SP	Parts No.	Description
PA-57 BOARD			
-	o	A-7850-507-A	COMPLETE PCB, PA-57
(This assembly includes the following parts.)			
-	s	2-832-007-00	BUSHING (K), INSULATING
-	s	3-703-207-11	INSULATOR, TO-220
-	s	7-628-254-10	SCREW +PS 2.6x6
-	s	7-628-254-20	SCREW +PS 2.6x8
C7	s	1-161-900-11	CAP, CERAMIC 1 50V
C8	s	1-161-900-11	CAP, CERAMIC 1 50V
C9	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C10	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C11	s	1-123-357-00	CAP, ELECT 22 20% 50V
C12	s	1-123-357-00	CAP, ELECT 22 20% 50V
C1021	s	1-102-978-00	CAP, CERAMIC 220P 5% 50V
C1022	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1023	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1024	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1025	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1026	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1121	s	1-102-978-00	CAP, CERAMIC 220P 5% 50V
C1122	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1123	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1124	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1125	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1126	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1201	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1202	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1203	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1204	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1205	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1206	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1301	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1302	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1303	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1304	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1305	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1306	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1401	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1402	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1403	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1404	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1405	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1406	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1501	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1502	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1503	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1504	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1505	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1506	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1601	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1602	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1603	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1604	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1605	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1606	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1701	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1702	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1703	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1704	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1705	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1706	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1801	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1802	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V

Ref. No.	SP	Parts No.	Description
C1803	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1804	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1805	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1806	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1901	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1902	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1903	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C1904	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1905	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C1906	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C2001	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C2002	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C2003	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C2004	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C2005	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C2006	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C2101	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C2102	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C2103	s	1-161-218-51	CAP, CERAMIC 0.0082 5% 50V
C2104	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C2105	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C2106	s	1-161-485-00	CAP, CERAMIC 0.1 50V
D1021	s	8-719-902-79	DIODE KV1236Z
D1022	s	8-719-902-79	DIODE KV1236Z
D1121	s	8-719-902-79	DIODE KV1236Z
D1122	s	8-719-902-79	DIODE KV1236Z
D1201	s	8-719-902-79	DIODE KV1236Z
D1202	s	8-719-902-79	DIODE KV1236Z
D1301	s	8-719-902-79	DIODE KV1236Z
D1302	s	8-719-902-79	DIODE KV1236Z
D1401	s	8-719-902-79	DIODE KV1236Z
D1402	s	8-719-902-79	DIODE KV1236Z
D1501	s	8-719-902-79	DIODE KV1236Z
D1502	s	8-719-902-79	DIODE KV1236Z
D1601	s	8-719-902-79	DIODE KV1236Z
D1602	s	8-719-902-79	DIODE KV1236Z
D1701	s	8-719-902-79	DIODE KV1236Z
D1702	s	8-719-902-79	DIODE KV1236Z
D1801	s	8-719-902-79	DIODE KV1236Z
D1802	s	8-719-902-79	DIODE KV1236Z
D1901	s	8-719-902-79	DIODE KV1236Z
D1902	s	8-719-902-79	DIODE KV1236Z
D2001	s	8-719-902-79	DIODE KV1236Z
D2002	s	8-719-902-79	DIODE KV1236Z
D2101	s	8-719-902-79	DIODE KV1236Z
D2102	s	8-719-902-79	DIODE KV1236Z
IC2	s	8-759-700-06	IC NJM7812B
IC3	s	8-759-179-12	IC UPC7912H
IC1021	s	1-807-890-11	IC TSHA
IC1121	s	1-807-890-11	IC TSHA
IC1201	s	1-807-890-11	IC TSHA
IC1301	s	1-807-890-11	IC TSHA
IC1401	s	1-807-890-11	IC TSHA
IC1501	s	1-807-890-11	IC TSHA
IC1601	s	1-807-890-11	IC TSHA
IC1701	s	1-807-890-11	IC TSHA
IC1801	s	1-807-890-11	IC TSHA
IC1901	s	1-807-890-11	IC TSHA
IC2001	s	1-807-890-11	IC TSHA
IC2101	s	1-807-890-11	IC TSHA
Q1	s	8-729-281-52	TRANSISTOR 2SC1815-Y
Q2	s	8-729-281-52	TRANSISTOR 2SC1815-Y
RV2	s	1-230-843-11	RES, ADJ, METAL 10K
RV3	s	1-230-842-11	RES, ADJ, METAL 5K

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
R1021	s	1-214-577-00	RES, METAL 6.8K 1% 1/8W
R1022	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1023	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1024	s	1-249-462-11	RES, CARBON 22K 5% 1/4W
R1121	s	1-214-577-00	RES, METAL 6.8K 1% 1/8W
R1122	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1123	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1124	s	1-249-462-11	RES, CARBON 22K 5% 1/4W
R1201	s	1-214-577-00	RES, METAL 6.8K 1% 1/8W
R1202	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1203	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1204	s	1-249-462-11	RES, CARBON 22K 5% 1/4W
R1301	s	1-214-577-00	RES, METAL 6.8K 1% 1/8W
R1302	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1303	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1304	s	1-249-462-11	RES, CARBON 22K 5% 1/4W
R1401	s	1-214-577-00	RES, METAL 6.8K 1% 1/8W
R1402	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1403	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1404	s	1-249-462-11	RES, CARBON 22K 5% 1/4W
R1501	s	1-214-577-00	RES, METAL 6.8K 1% 1/8W
R1502	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1503	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1504	s	1-249-462-11	RES, CARBON 22K 5% 1/4W
R1601	s	1-214-577-00	RES, METAL 6.8K 1% 1/8W
R1602	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1603	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1604	s	1-249-462-11	RES, CARBON 22K 5% 1/4W
R1701	s	1-214-577-00	RES, METAL 6.8K 1% 1/8W
R1702	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1703	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1704	s	1-249-462-11	RES, CARBON 22K 5% 1/4W
R1801	s	1-214-577-00	RES, METAL 6.8K 1% 1/8W
R1802	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1803	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1804	s	1-249-462-11	RES, CARBON 22K 5% 1/4W
R1901	s	1-214-577-00	RES, METAL 6.8K 1% 1/8W
R1902	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1903	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R1904	s	1-249-462-11	RES, CARBON 22K 5% 1/4W
R2001	s	1-214-577-00	RES, METAL 6.8K 1% 1/8W
R2002	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R2003	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R2004	s	1-249-462-11	RES, CARBON 22K 5% 1/4W
R2101	s	1-214-577-00	RES, METAL 6.8K 1% 1/8W
R2102	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R2103	s	1-215-830-11	RES, METAL 100K 1% 1/8W
R2104	s	1-249-462-11	RES, CARBON 22K 5% 1/4W
RV1021	s	1-230-844-11	RES, ADJ, METAL 20K
RV1121	s	1-230-844-11	RES, ADJ, METAL 20K
RV1201	s	1-230-844-11	RES, ADJ, METAL 20K
RV1301	s	1-230-844-11	RES, ADJ, METAL 20K
RV1401	s	1-230-844-11	RES, ADJ, METAL 20K
RV1501	s	1-230-844-11	RES, ADJ, METAL 20K
RV1601	s	1-230-844-11	RES, ADJ, METAL 20K
RV1701	s	1-230-844-11	RES, ADJ, METAL 20K
RV1801	s	1-230-844-11	RES, ADJ, METAL 20K
RV1901	s	1-230-844-11	RES, ADJ, METAL 20K
RV2001	s	1-230-844-11	RES, ADJ, METAL 20K
RV2101	s	1-230-844-11	RES, ADJ, METAL 20K
T1021	s	1-437-163-21	TRANSFORMER, DIGITAL
T1121	s	1-437-163-21	TRANSFORMER, DIGITAL
T1201	s	1-437-163-12	TRANSFORMER, DIGITAL
T1301	s	1-437-163-12	TRANSFORMER, DIGITAL
T1401	s	1-437-163-12	TRANSFORMER, DIGITAL

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. NO.	SP	Parts No.	Description
T1501	s	1-437-163-12	TRANSFORMER, DIGITAL
T1601	s	1-437-163-12	TRANSFORMER, DIGITAL
T1701	s	1-437-163-12	TRANSFORMER, DIGITAL
T1801	s	1-437-163-12	TRANSFORMER, DIGITAL
T1901	s	1-437-163-12	TRANSFORMER, DIGITAL
T2001	s	1-437-163-12	TRANSFORMER, DIGITAL
T2101	s	1-437-163-12	TRANSFORMER, DIGITAL

REC-1 BOARD

- o A-7850-495-A COMPLETE PCB, REC-1
(This assembly includes the following parts.)

-	s	2-251-622-11	LEVER, PC BOARD
C12	s	1-123-333-00	CAP, ELECT 100 20% 25V
C13	s	1-123-333-00	CAP, ELECT 100 20% 25V
C14	s	1-124-786-11	CAP, ELECT 22 20% 35V
C15	s	1-124-786-11	CAP, ELECT 22 20% 35V
C16	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C17	s	1-124-126-00	CAP, ELECT 47 20% 25V
C24	s	1-123-333-00	CAP, ELECT 100 20% 25V
C34	s	1-124-786-11	CAP, ELECT 22 20% 35V
C41	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1001	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1002	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1003	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1004	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1005	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1006	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1007	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1101	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1102	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1103	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1104	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1105	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1106	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1107	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1201	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1202	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1203	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1204	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1205	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1206	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1207	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1301	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1302	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1303	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1304	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1305	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1306	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1307	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1401	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1402	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1403	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1404	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1405	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1406	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1407	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1501	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1502	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1503	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1504	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1505	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1506	s	1-162-179-11	CAP, CERAMIC 0.1 50V

Ref. NO.	SP	Parts No.	Description
C1507	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1601	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1602	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1603	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1604	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1605	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1606	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1607	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1701	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1702	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1703	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1704	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1705	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1706	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1707	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1801	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1802	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1803	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1804	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1805	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1806	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1807	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C1901	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1902	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1903	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1904	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C1905	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1906	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C1907	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C2001	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C2002	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C2003	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C2004	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C2005	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C2006	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C2007	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
C2101	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C2102	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C2103	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C2104	s	1-102-951-00	CAP, CERAMIC 15P 5% 50V
C2105	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C2106	s	1-162-179-11	CAP, CERAMIC 0.1 50V
C2107	s	1-101-888-00	CAP, CERAMIC 68P 5% 50V
D5	s	8-719-921-20	DIODE 1SS119TD
D6	s	8-719-921-20	DIODE 1SS119TD
D7	s	8-719-812-41	DIODE TLR124
D8	s	8-719-921-20	DIODE 1SS119TD
D9	s	8-719-921-20	DIODE 1SS119TD
D10	s	8-719-812-41	DIODE TLR124
D11	s	8-719-924-06	DIODE ERC24-06S
D12	s	8-719-924-06	DIODE ERC24-06S
D13	s	8-719-924-06	DIODE ERC24-06S
D1001	s	8-719-921-20	DIODE 1SS119TD
D1002	s	8-719-921-20	DIODE 1SS119TD
D1003	s	8-719-921-20	DIODE 1SS119TD
D1004	s	8-719-921-20	DIODE 1SS119TD
D1101	s	8-719-921-20	DIODE 1SS119TD
D1102	s	8-719-921-20	DIODE 1SS119TD
D1103	s	8-719-921-20	DIODE 1SS119TD
D1104	s	8-719-921-20	DIODE 1SS119TD
D1201	s	8-719-921-20	DIODE 1SS119TD
D1202	s	8-719-921-20	DIODE 1SS119TD
D1203	s	8-719-921-20	DIODE 1SS119TD
D1204	s	8-719-921-20	DIODE 1SS119TD

Ref. NO.	SP	Parts No.	Description
D1301	s	8-719-921-20	DIODE 1SS119TD
D1302	s	8-719-921-20	DIODE 1SS119TD
D1303	s	8-719-921-20	DIODE 1SS119TD
D1304	s	8-719-921-20	DIODE 1SS119TD
D1401	s	8-719-921-20	DIODE 1SS119TD
D1402	s	8-719-921-20	DIODE 1SS119TD
D1403	s	8-719-921-20	DIODE 1SS119TD
D1404	s	8-719-921-20	DIODE 1SS119TD
D1501	s	8-719-921-20	DIODE 1SS119TD
D1502	s	8-719-921-20	DIODE 1SS119TD
D1503	s	8-719-921-20	DIODE 1SS119TD
D1504	s	8-719-921-20	DIODE 1SS119TD
D1601	s	8-719-921-20	DIODE 1SS119TD
D1602	s	8-719-921-20	DIODE 1SS119TD
D1603	s	8-719-921-20	DIODE 1SS119TD
D1604	s	8-719-921-20	DIODE 1SS119TD
D1701	s	8-719-921-20	DIODE 1SS119TD
D1702	s	8-719-921-20	DIODE 1SS119TD
D1703	s	8-719-921-20	DIODE 1SS119TD
D1704	s	8-719-921-20	DIODE 1SS119TD
D1801	s	8-719-921-20	DIODE 1SS119TD
D1802	s	8-719-921-20	DIODE 1SS119TD
D1803	s	8-719-921-20	DIODE 1SS119TD
D1804	s	8-719-921-20	DIODE 1SS119TD
D1901	s	8-719-921-20	DIODE 1SS119TD
D1902	s	8-719-921-20	DIODE 1SS119TD
D1903	s	8-719-921-20	DIODE 1SS119TD
D1904	s	8-719-921-20	DIODE 1SS119TD
D2001	s	8-719-921-20	DIODE 1SS119TD
D2002	s	8-719-921-20	DIODE 1SS119TD
D2003	s	8-719-921-20	DIODE 1SS119TD
D2004	s	8-719-921-20	DIODE 1SS119TD
D2101	s	8-719-921-20	DIODE 1SS119TD
D2102	s	8-719-921-20	DIODE 1SS119TD
D2103	s	8-719-921-20	DIODE 1SS119TD
D2104	s	8-719-921-20	DIODE 1SS119TD
IC4	s	8-759-700-53	IC NJM7808A
IC5	s	8-759-700-30	IC NJM7908A
IC13	s	8-759-354-52	IC HD75452P
IC19	s	8-759-354-52	IC HD75452P
IC20	s	8-759-354-52	IC HD75452P
ICA3	s	8-759-202-27	IC TC74HC157P
ICA4	s	8-759-202-27	IC TC74HC157P
ICA5	s	8-759-202-32	IC TC74HC163P
ICA6	s	8-759-202-27	IC TC74HC157P
ICA7	s	8-759-974-07	IC SN7407N
ICA8	s	8-759-974-07	IC SN7407N
ICB1	s	8-729-131-11	IC UPC311C
ICB3	s	8-759-202-92	IC TC74HC151P
ICB4	s	8-759-203-40	IC TC74HC393P
ICB5	s	8-759-900-37	IC SN74LS37N
ICB6	s	8-759-203-40	IC TC74HC393P
ICB7	s	8-759-202-74	IC TC74HC04P
ICC3	s	8-729-131-11	IC UPC311C
ICC4	s	8-759-203-52	IC TC74HC595P
ICC5	s	8-759-776-44	IC TBP28L42N-REC-C5
ICC6	s	8-759-906-42	IC SN74LS642N
ICC8	s	8-759-974-07	IC SN7407N
ICD4	s	8-759-918-92	IC HA3-2525-5
ICD6	s	8-759-240-51	IC TC4051BP
ICD8	s	8-759-981-00	IC TL081CP
ICE4	s	8-759-918-92	IC HA3-2525-5
ICE6	s	8-759-240-51	IC TC4051BP
ICE8	s	8-759-981-00	IC TL081CP
ICF4	s	8-759-918-92	IC HA3-2525-5
ICF6	s	8-759-240-51	IC TC4051BP
ICF8	s	8-759-981-00	IC TL081CP

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
ICH4	s	8-759-918-92	IC HA3-2525-5
ICH6	s	8-759-240-51	IC TC4051BP
ICH8	s	8-759-981-00	IC TL081CP
ICJ4	s	8-759-918-92	IC HA3-2525-5
ICJ6	s	8-759-240-51	IC TC4051BP
ICJ8	s	8-759-981-00	IC TL081CP
ICK4	s	8-759-918-92	IC HA3-2525-5
ICK6	s	8-759-240-51	IC TC4051BP
ICK8	s	8-759-981-00	IC TL081CP
ICL4	s	8-759-918-92	IC HA3-2525-5
ICL6	s	8-759-240-51	IC TC4051BP
ICL8	s	8-759-981-00	IC TL081CP
ICM4	s	8-759-918-92	IC HA3-2525-5
ICM6	s	8-759-240-51	IC TC4051BP
ICM8	s	8-759-981-00	IC TL081CP
ICN4	s	8-759-918-92	IC HA3-2525-5
ICN6	s	8-759-240-51	IC TC4051BP
ICN8	s	8-759-981-00	IC TL081CP
ICP4	s	8-759-918-92	IC HA3-2525-5
ICP6	s	8-759-240-51	IC TC4051BP
ICP8	s	8-759-981-00	IC TL081CP
ICR4	s	8-759-918-92	IC HA3-2525-5
ICR6	s	8-759-240-51	IC TC4051BP
ICR8	s	8-759-981-00	IC TL081CP
ICS4	s	8-759-918-92	IC HA3-2525-5
ICS6	s	8-759-240-51	IC TC4051BP
ICS8	s	8-759-981-00	IC TL081CP
Q3	s	8-729-122-02	TRANSISTOR 2SA1220A-P
Q1001	s	8-729-306-92	TRANSISTOR 2SD669A
Q1002	s	8-729-364-92	TRANSISTOR 2SB649-C
Q1101	s	8-729-306-92	TRANSISTOR 2SD669A
Q1102	s	8-729-364-92	TRANSISTOR 2SB649-C
Q1201	s	8-729-306-92	TRANSISTOR 2SD669A
Q1202	s	8-729-364-92	TRANSISTOR 2SB649-C
Q1301	s	8-729-306-92	TRANSISTOR 2SD669A
Q1302	s	8-729-364-92	TRANSISTOR 2SB649-C
Q1401	s	8-729-306-92	TRANSISTOR 2SD669A
Q1402	s	8-729-364-92	TRANSISTOR 2SB649-C
Q1501	s	8-729-306-92	TRANSISTOR 2SD669A
Q1502	s	8-729-364-92	TRANSISTOR 2SB649-C
Q1601	s	8-729-306-92	TRANSISTOR 2SD669A
Q1602	s	8-729-364-92	TRANSISTOR 2SB649-C
Q1701	s	8-729-306-92	TRANSISTOR 2SD669A
Q1702	s	8-729-364-92	TRANSISTOR 2SB649-C
Q1801	s	8-729-306-92	TRANSISTOR 2SD669A
Q1802	s	8-729-364-92	TRANSISTOR 2SB649-C
Q1901	s	8-729-306-92	TRANSISTOR 2SD669A
Q1902	s	8-729-364-92	TRANSISTOR 2SB649-C
Q2001	s	8-729-306-92	TRANSISTOR 2SD669A
Q2002	s	8-729-364-92	TRANSISTOR 2SB649-C
Q2101	s	8-729-306-92	TRANSISTOR 2SD669A
Q2102	s	8-729-364-92	TRANSISTOR 2SB649-C
R18	s	1-249-434-11	RES, CARBON 27K 5% 1/4W
R19	s	1-249-413-11	RES, CARBON 470 5% 1/4W
R20	s	1-249-417-11	RES, CARBON 1K 5% 1/4W
R21	s	1-249-423-11	RES, CARBON 3.3K 5% 1/4W
R22	s	1-249-429-11	RES, CARBON 10K 5% 1/4W

Ref. No.	SP	Parts No.	Description
R23	s	1-249-423-11	RES, CARBON 3.3K 5% 1/4W
R24	s	1-249-429-11	RES, CARBON 10K 5% 1/4W
R25	s	1-249-414-11	RES, CARBON 560 5% 1/4W
R26	s	1-249-417-11	RES, CARBON 1K 5% 1/4W
R27	s	1-249-421-11	RES, CARBON 2.2K 5% 1/4W
R28	s	1-249-437-11	RES, CARBON 47K 5% 1/4W
R29	s	1-249-437-11	RES, CARBON 47K 5% 1/4W
R30	s	1-249-437-11	RES, CARBON 47K 5% 1/4W
R31	s	1-249-437-11	RES, CARBON 47K 5% 1/4W
R32	s	1-249-413-11	RES, CARBON 470 5% 1/4W
R33	s	1-249-413-11	RES, CARBON 470 5% 1/4W
R1003 to R2103 (x12)			
(R1003, 1103, 1203, 1303, 1403, 1503, 1603, 1703, 1803, 1903, 2003, 2103)			
s	1-247-860-11	RES, CARBON 16K 5% 1/6W	
R1008 to R2108 (x12)			
(R1008, 1108, 1208, 1308, 1408, 1508, 1608, 1708, 1808, 1908, 2008, 2108)			
s	1-247-836-11	RES, CARBON 1.6K 5% 1/6W	
R1301 to R2101 (x9)			
(R1301, 1401, 1501, 1601, 1701, 1801, 1901, 2001, 2101)			
s	1-249-417-11	RES, CARBON 1K 5% 1/4W	
R1302 to R2102 (x9)			
(R1302, 1402, 1502, 1602, 1702, 1802, 1902, 2002, 2102)			
s	1-249-429-11	RES, CARBON 10K 5% 1/4W	
R1303 to R2103 (x9)			
(R1303, 1403, 1503, 1603, 1703, 1803, 1903, 2003, 2103)			
s	1-247-860-11	RES, CARBON 16K 5% 1/4W	
R1304 to R2104 (x9)			
(R1304, 1404, 1504, 1604, 1704, 1804, 1904, 2004, 2104)			
s	1-249-425-11	RES, CARBON 4.7K 5% 1/4W	
R1305 to R2105 (x9)			
(R1305, 1405, 1505, 1605, 1705, 1805, 1905, 2005, 2105)			
s	1-247-854-11	RES, CARBON 9.1K 5% 1/4W	
R1306 to R2106 (x9)			
(R1306, 1406, 1506, 1606, 1706, 1806, 1906, 2006, 2106)			
s	1-249-418-11	RES, CARBON 1.2K 5% 1/4W	
R1307 to R2107 (x9)			
(R1307, 1407, 1507, 1607, 1707, 1807, 1907, 2007, 2107)			
s	1-249-419-11	RES, CARBON 1.5K 5% 1/4W	
R1308 to R2108 (x9)			
(R1308, 1408, 1508, 1608, 1708, 1808, 1908, 2008, 2108)			
s	1-247-836-11	RES, CARBON 1.6K 5% 1/4W	
R1309 to R2109 (x9)			
(R1309, 1409, 1509, 1609, 1709, 1809, 1909, 2009, 2109)			
s	1-249-401-11	RES, CARBON 47 5% 1/4W	
R1310 to R2110 (x9)			
(R1310, 1410, 1510, 1610, 1710, 1810, 1910, 2010, 2110)			
s	1-249-401-11	RES, CARBON 47 5% 1/4W	
R1311 to R2111 (x9)			
(R1311, 1411, 1511, 1611, 1711, 1811, 1911, 2011, 2111)			
s	1-249-419-11	RES, CARBON 1.5K 5% 1/4W	
R1312 to R2112 (x9)			
(R1312, 1412, 1512, 1612, 1712, 1812, 1912, 2012, 2112)			
s	1-249-429-11	RES, CARBON 10K 5% 1/4W	

NOTE : please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
R1313 to R2113 (x9)			
(R1313, 1413, 1513, 1613, 1713, 1813, 1913, 2013, 2113)	s	1-249-429-11	RES, CARBON 10K 5% 1/4W
R1314 to R2114 (x9)			
(R1314, 1414, 1514, 1614, 1714, 1814, 1914, 2014, 2114)	s	1-249-390-11	RES, CARBON 5.6 5% 1/4W
R1315 to R2115 (x9)			
(R1315, 1415, 1515, 1615, 1715, 1815, 1915, 2015, 2115)	s	1-249-390-11	RES, CARBON 5.6 5% 1/4W
RB1 to 4	s	1-231-549-11	BLOCK, RESISTOR 47Kx4
RB5	s	1-235-005-00	RESISTOR BLOCK 47K
RB6	s	1-231-549-11	BLOCK, RESISTOR 47Kx4
RL1	s	1-515-657-11	RELAY, MICRO.REED
RL2	s	1-515-657-11	RELAY, MICRO.REED
RL3	s	1-515-657-11	RELAY, MICRO.REED
RL4	s	1-515-657-11	RELAY, MICRO.REED
RV1001	s	1-230-840-11	RES, ADJ, METAL 1K
RV1002	s	1-230-841-11	RES, ADJ, METAL 2K
RV1003	s	1-230-841-11	RES, ADJ, METAL 2K
RV1101	s	1-230-840-11	RES, ADJ, METAL 1K
RV1102	s	1-230-841-11	RES, ADJ, METAL 2K
RV1103	s	1-230-841-11	RES, ADJ, METAL 2K
RV1201	s	1-230-840-11	RES, ADJ, METAL 1K
RV1202	s	1-230-841-11	RES, ADJ, METAL 2K
RV1203	s	1-230-841-11	RES, ADJ, METAL 2K
RV1301	s	1-230-840-11	RES, ADJ, METAL 1K
RV1302	s	1-237-517-21	RES, ADJ, CERMET 5K
RV1303	s	1-237-517-21	RES, ADJ, CERMET 5K
RV1401	s	1-230-840-11	RES, ADJ, METAL 1K
RV1402	s	1-237-517-21	RES, ADJ, CERMET 5K
RV1403	s	1-237-517-21	RES, ADJ, CERMET 5K
RV1501	s	1-230-840-11	RES, ADJ, METAL 1K
RV1502	s	1-237-517-21	RES, ADJ, CERMET 5K
RV1503	s	1-237-517-21	RES, ADJ, CERMET 5K
RV1601	s	1-230-840-11	RES, ADJ, METAL 1K
RV1602	s	1-237-517-21	RES, ADJ, CERMET 5K
RV1603	s	1-237-517-21	RES, ADJ, CERMET 5K
RV1701	s	1-230-840-11	RES, ADJ, METAL 1K
RV1702	s	1-237-517-21	RES, ADJ, CERMET 5K
RV1703	s	1-237-517-21	RES, ADJ, CERMET 5K
RV1801	s	1-230-840-11	RES, ADJ, METAL 1K
RV1802	s	1-237-517-21	RES, ADJ, CERMET 5K
RV1803	s	1-237-517-21	RES, ADJ, CERMET 5K
RV1901	s	1-230-840-11	RES, ADJ, METAL 1K
RV1902	s	1-237-517-21	RES, ADJ, CERMET 5K
RV1903	s	1-237-517-21	RES, ADJ, CERMET 5K
RV2001	s	1-230-840-11	RES, ADJ, METAL 1K
RV2002	s	1-237-517-21	RES, ADJ, CERMET 5K
RV2003	s	1-237-517-21	RES, ADJ, CERMET 5K
RV2101	s	1-230-840-11	RES, ADJ, METAL 1K
RV2102	s	1-237-517-21	RES, ADJ, CERMET 5K
RV2103	s	1-237-517-21	RES, ADJ, CERMET 5K
SW1	o	1-570-598-11	SWITCH, DIP
SW2	s	1-553-441-00	SWITCH, TOGGLE

Ref. No.	SP	Parts No.	Description
SE-53 BOARD			
-	o	A-7850-479-A	MOUNTED PCB, SE-53
(This assembly includes the following parts.)			
C2	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C3	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C4	s	1-124-247-00	CAP, ELECT 10 20% 35V
C5	s	1-124-247-00	CAP, ELECT 10 20% 35V
C6	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C7	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C8	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C9	s	1-102-973-00	CAP, CERAMIC 100P 5% 50V
C10	s	1-102-973-00	CAP, CERAMIC 100P 5% 50V
CN446	o	1-560-367-00	CONNECTOR POST HEADER, ILG (5P)
D1	s	8-719-904-21	DIODE HZ12A1
DME1	s	8-745-211-00	DME DM211
IC1	s	8-759-103-93	IC UPC393C
IC2	s	8-759-990-82	IC TL082CP
R1	s	1-215-457-00	RES, METAL 33K 1% 1/6W
R3	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R4	s	1-215-447-00	RES, METAL 12K 1% 1/6W
R6	s	1-215-457-00	RES, METAL 33K 1% 1/6W
R7	s	1-215-469-00	RES, METAL 100K 1% 1/6W
R8	s	1-215-429-00	RES, METAL 2.2K 1% 1/6W
R9	s	1-215-429-00	RES, METAL 2.2K 1% 1/6W
R10	s	1-215-457-00	RES, METAL 33K 1% 1/6W
R11	s	1-215-429-00	RES, METAL 2.2K 1% 1/6W
R12	s	1-215-457-00	RES, METAL 33K 1% 1/6W
R13	s	1-215-457-00	RES, METAL 33K 1% 1/6W
R14	s	1-215-457-00	RES, METAL 33K 1% 1/6W
R15	s	1-215-429-00	RES, METAL 2.2K 1% 1/6W
R16	s	1-215-429-00	RES, METAL 2.2K 1% 1/6W

SE-54 BOARD			
-	o	A-7850-484-A	MOUNTED PCB, SE-54
(This assembly includes the following parts.)			
C1	s	1-124-278-00	CAP, ELECT NONPOLAR 10 20% 35V
C2	s	1-124-278-00	CAP, ELECT NONPOLAR 10 20% 35V
C3	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C4	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C5	s	1-161-485-00	CAP, CERAMIC 0.1 50V
CN414	o	1-560-366-00	CONNECTOR POST HEADER, ILG (4P)
D1	s	8-719-911-19	DIODE 1S8119
D2	s	8-719-910-62	DIODE HZ6A2L
IC1	s	8-719-800-17	DIODE THS102A
IC2	s	8-759-910-83	IC TL072ACP
Q1	s	8-729-201-53	TRANSISTOR 2SA1015-GR
RV1	s	1-228-459-00	RES, ADJ, METAL 10K
RV2	s	1-228-459-00	RES, ADJ, METAL 10K

NOTE : Please see pages D-21 for the part numbers of capacitors and resistors that are not listed in the parts list.

Ref. No.	SP	Parts No.	Description
SEP-1 BOARD			
-	o	A-7850-497-A	MOUNTED PCB, SEP-1 (This assembly includes the following parts.)
-	s	2-251-622-11	LEVER, PC BOARD
C9	s	1-123-333-00	CAP, ELECT 100 20% 25V
D1 to 8	s	8-719-812-44	DIODE TL0124
IC1	s	8-759-202-21	IC TC74HC32P
ICA1	s	8-759-202-74	IC TC74HC04P
ICA2	s	8-759-202-74	IC TC74HC04P
ICA4	s	8-759-203-36	IC TC74HC374P
ICA5	s	8-759-203-36	IC TC74HC374P
ICA6	s	8-759-202-27	IC TC74HC157P
ICA7	s	8-759-202-32	IC TC74HC163P
ICA8	s	8-759-202-15	IC TC74HC10P
ICA9	s	8-759-202-11	IC TC74HC00P
ICA10	s	8-759-202-74	IC TC74HC04P
ICA11	s	8-759-000-99	IC MC74HC74N
ICB1	s	8-759-202-27	IC TC74HC157P
ICB2	s	8-759-202-27	IC TC74HC157P
ICB4	s	8-759-914-39	IC MBM2114A-10LP
ICB5	s	8-759-914-39	IC MBM2114A-10LP
ICB6	s	8-759-202-27	IC TC74HC157P
ICB7	s	8-759-202-32	IC TC74HC163P
ICB8	s	8-759-202-18	IC TC74HC20P
ICB9	s	8-759-202-21	IC TC74HC32P
ICB10	s	8-759-202-32	IC TC74HC163P
ICB11	s	8-759-202-89	IC TC74HC139P
ICC1	s	8-759-917-01	IC SN74HC379N
ICC2	s	8-759-917-01	IC SN74HC379N
ICC3	s	8-759-013-84	IC MCM6147AP-55
ICC4	s	8-759-914-39	IC MBM2114A-10LP
ICC5	s	8-759-914-39	IC MBM2114A-10LP
ICC6	s	8-759-202-27	IC TC74HC157P
ICC7	s	8-759-202-32	IC TC74HC163P
ICC8	s	8-759-202-14	IC TC74HC08P
ICC9	s	8-759-202-21	IC TC74HC32P
ICC10	s	8-759-202-21	IC TC74HC32P
ICC11	s	8-759-202-74	IC TC74HC04P
ICD1	s	8-759-203-36	IC TC74HC374P
ICD2	s	8-759-203-36	IC TC74HC374P
ICD3	s	8-759-203-24	IC TC74HC283P
ICD4	s	8-759-001-33	IC MC74HC158N
ICD5	s	8-759-901-89	IC SN74LS189AN
ICD6	s	8-759-203-36	IC TC74HC374P
ICD7	s	8-759-001-42	IC MC74HC174N
ICD8	s	8-759-202-32	IC TC74HC163P
ICD9	s	8-759-000-99	IC MC74HC74N
ICD10	s	8-759-203-01	IC TC74HC175P
ICD11	s	8-759-000-99	IC MC74HC74N
ICE1	s	8-759-202-24	IC TC74HC86P
ICE2	s	8-759-202-24	IC TC74HC86P
ICE3	s	8-759-203-17	IC TC74HC251P
ICE4	s	8-759-202-82	IC TC74HC85P
ICE5	s	8-759-776-81	IC MB7114L-SEP-E5
ICE6	s	8-759-901-89	IC SN74LS189AN
ICE7	s	8-759-203-17	IC TC74HC251P
ICE11	s	8-759-202-26	IC TC74HC138P
ICF1	s	8-759-202-11	IC TC74HC00P
ICF2	s	8-759-202-11	IC TC74HC00P
ICF3	s	8-759-202-26	IC TC74HC138P

Ref. No.	SP	Parts No.	Description
ICH1	s	8-759-202-32	IC TC74HC163P
ICH2	s	8-759-202-32	IC TC74HC163P
ICH3	s	8-759-202-74	IC TC74HC04P
ICH4	s	8-759-914-39	IC MBM2114A-10LP
ICH7	s	8-759-920-85	IC CXD1026G
ICH8	s	8-759-914-39	IC MBM2114A-10LP
ICH11	s	8-759-920-85	IC CXD1026G
ICJ1	s	8-759-202-32	IC TC74HC163P
ICJ2	s	8-759-202-32	IC TC74HC163P
ICJ3	s	8-759-202-26	IC TC74HC138P
ICJ4	s	8-759-914-39	IC MBM2114A-10LP
ICJ7	s	8-759-920-85	IC CXD1026G
ICJ8	s	8-759-914-39	IC MBM2114A-10LP
ICJ11	s	8-759-920-85	IC CXD1026G
ICK1	s	8-759-202-11	IC TC74HC00P
ICK2	s	8-759-202-11	IC TC74HC00P
ICK3	s	8-759-202-26	IC TC74HC138P
ICL1	s	8-759-202-32	IC TC74HC163P
ICL2	s	8-759-202-32	IC TC74HC163P
ICL3	s	8-759-202-74	IC TC74HC04P
ICL4	s	8-759-914-39	IC MBM2114A-10LP
ICL7	s	8-759-920-85	IC CXD1026G
ICL8	s	8-759-914-39	IC MBM2114A-10LP
ICL11	s	8-759-920-85	IC CXD1026G
ICM1	s	8-759-202-32	IC TC74HC163P
ICM2	s	8-759-202-32	IC TC74HC163P
ICM3	s	8-759-202-86	IC TC74HC123P
ICM4	s	8-759-914-39	IC MBM2114A-10LP
ICM7	s	8-759-920-85	IC CXD1026G
ICM8	s	8-759-914-39	IC MBM2114A-10LP
ICM11	s	8-759-920-85	IC CXD1026G
ICN1	s	8-759-202-86	IC TC74HC123P
ICN2	s	8-759-202-86	IC TC74HC123P
ICN3	s	8-759-202-86	IC TC74HC123P
ICN4	s	8-759-202-26	IC TC74HC164N
ICN5	s	8-759-202-27	IC TC74HC157P
ICN6	s	8-759-901-89	IC SN74LS189AN
ICN7	s	8-759-001-39	IC MC74HC164N
ICN8	s	8-759-202-24	IC TC74HC86P
ICN9	s	8-759-926-31	IC AM26LS31PC
ICN10	s	8-759-202-74	IC TC74HC04P
ICN11	s	8-759-202-78	IC TC74HC51P
RB1	s	1-231-450-00	BLOCK, RESISTOR 3.3Kx8
RB2	s	1-235-005-00	RESISTOR BLOCK 47K
RB3	s	1-235-005-00	RESISTOR BLOCK 47K
RB4	s	1-235-005-00	RESISTOR BLOCK 47K
SW1	s	1-553-441-00	SWITCH, TOGGLE

TPC-1 BOARD

- o A-7850-482-A COMPLETE PCB, TPC-1
(This assembly includes the following parts.)

C1 to 4	s	1-161-485-00	CAP, CERAMIC 0.1	50V
C5	s	1-104-077-00	CAP, STYROL 0.001 5%	50V
C6	s	1-161-485-00	CAP, CERAMIC 0.1	50V
C7	s	1-102-816-00	CAP, CERAMIC 120P 5%	50V
C8 to 11	s	1-136-153-00	CAP, METAL 0.01 5%	50V

NOTE : Please see pages D-21 for the part numbers
of capacitors and resistors that are not
listed in the parts list.

Ref. No.	SP	Parts No.	Description
C12	s	1-124-479-11	CAP, ELECT 330 20% 25V
C13	s	1-124-479-11	CAP, ELECT 330 20% 25V
C14	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 26			
C27	s	1-124-471-00	CAP, ELECT 1000 20% 6.3V
C28	s	1-161-485-00	CAP, CERAMIC 0.1 50V
to 46			
C47	s	1-124-910-11	CAP, ELECT 47 20% 50V
C48	s	1-124-917-11	CAP, ELECT 33 20% 63V
C49	s	1-124-446-11	CAP, ELECT 47 20% 10V
C50	s	1-124-446-11	CAP, ELECT 47 20% 10V
C51	s	1-161-485-00	CAP, CERAMIC 0.1 50V
C52	s	1-161-485-00	CAP, CERAMIC 0.1 50V
CN402	o	1-560-357-00	CONNECTOR POST HEADER, ILG (3P)
CN403	o	1-560-357-00	CONNECTOR POST HEADER, ILG (3P)
CN404	o	1-560-357-00	CONNECTOR POST HEADER, ILG (3P)
CN405	o	1-560-358-00	CONNECTOR POST HEADER, ILG (4P)
CN406	o	1-560-357-00	CONNECTOR POST HEADER, ILG (3P)
CN407	o	1-560-359-00	CONNECTOR POST HEADER, ILG (5P)
CN408	o	1-560-357-00	CONNECTOR POST HEADER, ILG (3P)
CN409	o	1-560-361-00	CONNECTOR POST HEADER, ILG (8P)
CN410	o	1-560-359-00	CONNECTOR POST HEADER, ILG (5P)
CN411	o	1-560-359-00	CONNECTOR POST HEADER, ILG (5P)
CN412	o	1-560-357-00	CONNECTOR POST HEADER, ILG (3P)
CN413	o	1-560-357-00	CONNECTOR POST HEADER, ILG (3P)
CN906	o	1-560-360-00	CONNECTOR POST HEADER, ILG (6P)
D1	s	8-719-911-19	DIODE 1SS119
to 10			
D11	s	8-719-200-02	DIODE 10E-2
to 18			
D19	s	8-719-911-19	DIODE 1SS119
D20	s	8-719-910-61	DIODE HZ6A1L
D21	s	8-719-200-02	DIODE 10E-2
D22	s	8-719-100-77	DIODE RP18E-B2
IC1	s	8-759-990-84	IC TL084CN
IC2	s	8-759-930-80	IC CA3080E
IC3	s	8-759-981-00	IC TL081CP
IC4	s	8-759-981-00	IC TL081CP
IC5	s	8-759-990-84	IC TL084CN
IC6	s	8-759-922-23	IC PCM53JP-V
ICA1	s	8-759-202-56	IC TC74HC245P
ICA2	s	8-759-001-42	IC MC74HC174N
ICA3	s	8-759-203-21	IC TC74HC273P
ICA4	s	8-759-203-21	IC TC74HC273P
ICA5	s	8-759-203-21	IC TC74HC273P
ICA6	s	8-759-203-30	IC TC74HC365P
ICA7	s	8-759-000-99	IC MC74HC74N
ICA8	s	8-759-000-99	IC MC74HC74N
ICB1	s	8-759-203-30	IC TC74HC365P
ICB2	s	8-759-202-26	IC TC74HC138P
ICB3	s	8-759-202-86	IC TC74HC123P
ICB4	s	8-759-202-74	IC TC74HC04P
ICB5	s	8-759-001-42	IC MC74HC174N

Ref. No.	SP	Parts No.	Description
ICB6	s	8-759-906-79	IC AD7574JN
ICB7	s	8-759-202-24	IC TC74HC86P
ICB8	s	8-759-202-17	IC TC74HC14P
ICC1	s	8-759-990-84	IC TL084CN
ICC5	s	8-759-990-84	IC TL084CN
Q1	s	8-729-207-36	TRANSISTOR 2SJ105-GR
to 9			
Q10	s	8-729-201-53	TRANSISTOR 2SA1015-GR
Q11	s	8-729-205-88	TRANSISTOR 2SC3074-Y
to 18			
Q19	s	8-729-206-12	TRANSISTOR 2SA1244-Y
Q20	s	8-729-281-53	TRANSISTOR 2SC1815-GR
R2	s	1-247-891-00	RES, CARBON 330K 5% 1/4W
R44	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R60	s	1-247-849-00	RES, CARBON 5.6K 5% 1/4W
R63	s	1-247-753-11	RES, CARBON 1.2K 5% 1/2W
R64	s	1-249-447-11	RES, CARBON 1 5% 1/4W
to 67			
R70	s	1-215-452-00	RES, METAL 20K 1% 1/6W
RB1	s	1-235-005-00	RESISTOR BLOCK 47K
RB2	s	1-235-005-00	RESISTOR BLOCK 47K
RB3	s	1-235-005-00	RESISTOR BLOCK 47K
RB4	s	1-231-450-00	BLOCK, RESISTOR 3.3Kx8
RV1	s	1-230-843-11	RES, ADJ, METAL 10K
RV2	s	1-230-839-11	RES, ADJ, METAL 500
RV3	s	1-230-842-11	RES, ADJ, METAL 5K
RV4	s	1-230-842-11	RES, ADJ, METAL 5K
RV5	s	1-230-842-11	RES, ADJ, METAL 5K

VR-56 BOARD

-	o	1-620-326-11	PC BOARD, VR-56
CN432	o	1-560-365-00	CONNECTOR POST HEADER, ILG (3P)
RV1	s	1-230-739-21	RES, VAR, CARBON 1K

Ref.No.	No. SP	Parts No.	Description
FRAME			
MAIN ASSY			
-	s	1-413-183-13	SWITCHING REGULATOR
-	o	1-535-420-00	TAB, FASTEN
-	o	1-535-421-00	TAB, FASTEN
-	s	1-541-409-31	MOTOR, FAN
-	o	1-559-221-11	CABLE ASSY, D.PB HEAD FLAT
-	o	1-559-222-11	CABLE ASSY, CPU FLAT
-	o	1-559-223-11	CABLE ASSY, IF FLAT (2)
-	o	1-559-224-11	CABLE ASSY, DET FLAT
-	o	1-559-225-11	CABLE ASSY, PRE FLAT
-	o	1-559-226-11	CABLE ASSY, TPC FLAT
-	o	1-559-227-11	CABLE ASSY, IF FLAT (1)
-	o	1-559-228-11	CABLE ASSY, SYNC REC FLAT
-	o	1-559-229-11	CABLE ASSY, AD REC FLAT
-	o	1-559-230-11	CABLE ASSY, IF FLAT (3)
-	o	1-938-905-11	HARNESS (ARP HEAD)
-	o	1-560-767-00	CONTACT, CONNECTOR
-	o	1-561-890-00	HOUSING, CONNECTOR 20P
-	o	1-561-891-00	HOUSING, CONNECTOR 26P
-	o	1-938-906-11	HARNESS (MOTOR CONTROL)
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-561-519-00	CONNECTOR HOUSING, ILG (8P)
-	o	1-938-907-11	HARNESS (DR)
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-561-514-00	CONNECTOR HOUSING, ILG (2P)
-	o	1-561-515-00	CONNECTOR HOUSING, ILG (3P)
-	o	1-561-518-00	CONNECTOR HOUSING, ILG (6P)
-	o	1-938-908-11	HARNESS (R.TACH)
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-561-517-00	CONNECTOR HOUSING, ILG (5P)
-	o	1-938-909-11	HARNESS (L.TACH)
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-561-517-00	CONNECTOR HOUSING, ILG (5P)
-	o	1-938-910-11	HARNESS (T.TACH)
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-561-517-00	CONNECTOR HOUSING, ILG (5P)
-	o	1-938-911-11	HARNESS (TENSION)
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-561-516-00	CONNECTOR HOUSING, ILG (4P)
-	o	1-938-912-11	HARNESS (SHUTTLE)
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-561-515-00	CONNECTOR HOUSING, (3P)
-	o	1-938-913-11	HARNESS (MOTHER POWER)
-	o	1-561-067-00	CONTACT, SOCKET
-	o	1-561-070-00	HOUSING, PLUG
-	o	1-561-828-00	HOUSING, PLUG 3P
-	o	1-566-179-11	PLUG, CONNECTOR 15P
-	o	1-938-914-11	HARNESS (IF.TPC POWER)
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-561-516-00	CONNECTOR HOUSING, ILG (4P)
-	o	1-561-518-00	CONNECTOR HOUSING, ILG (6P)
-	o	1-566-179-21	PLUG, CONNECTOR 15P
-	o	1-938-915-11	HARNESS (IF.DR POWER)
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-561-067-00	CONTACT, SOCKET
-	o	1-561-071-00	HOUSING, PLUG
-	o	1-561-517-00	CONNECTOR HOUSING, ILG (5P)
-	o	1-566-178-21	PLUG, CONNECTOR 12P

Ref.	No. SP	Parts No.	Description
SHIFTER ASSY			
-	s	1-454-448-11	SOLENOID, SHIFTER PLUNGER
-	o	1-938-899-11	HARNESS (EOT)
(This part includes the following parts.)			
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-561-516-00	CONNECTOR HOUSING, ILG (4P)
-	s	8-719-802-00	DIODE TLN109
-	s	8-729-206-03	TRANSISTOR TPS603
MOTOR ASSY, S REEL			
-	s	1-454-426-61	SOLENOID, PLUNGER
MOTOR ASSY, T REEL			
-	s	1-454-426-51	SOLENOID, PLUNGER
MOTOR ASSY, CAPSTAN			
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-561-156-00	CONNECTOR, EI HOUSING
-	o	1-561-516-00	CONNECTOR HOUSING, ILG (4P)
-	o	1-938-901-11	HARNESS (CAPSTAN)
PINCH ASSY			
-	s	1-454-449-12	SOLENOID, PRE PLUNGER
-	s	1-454-450-11	SOLENOID, PINCH PLUNGER
MONITOR ASSY			
-	s	1-237-672-11	RES, VAR, CARBON 500
-	s	1-553-244-00	SWITCH, TOGGLE
-	s	1-553-249-00	SWITCH, TOGGLE
-	o	1-559-219-11	CABLE ASSY, METER FLAT (2)
-	o	1-559-220-11	CABLE ASSY, METER FLAT (1)
-	s	1-570-297-11	SWITCH, ROTARY
-	o	1-938-894-11	HARNESS (DIGITAL CONTROL)
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-938-895-11	HARNESS (MONITOR POWER)
-	o	1-938-902-11	HARNESS (METER.HEADPHONE)
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-560-767-00	CONTACT, CONNECTOR
-	o	1-561-519-00	CONNECTOR HOUSING, ILG (8P)
-	o	1-561-889-00	HOUSING, CONNECTOR 16P
-	o	1-938-903-11	HARNESS (MA-24)
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-561-519-00	CONNECTOR HOUSING, ILG (8P)
-	o	1-938-904-11	HARNESS (METER CONTROL)
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-561-521-00	CONNECTOR HOUSING, ILG (12P)
-	s	1-530-291-00	SPEAKER
-	o	1-938-896-11	HARNESS (SPEAKER)
-	o	1-560-372-00	TERMINAL, SOLDERLESS
-	o	1-561-515-00	CONNECTOR HOUSING, ILG (3P)

Ref.	No.	SP	Parts No.	Description
PANEL ASSY, CONNECTOR				
-	s		1-161-742-00	CAP, CERAMIC 2200P 20% 400V
-	s		1-509-176-51	CONNECTOR (RECEPTACLE) 3P
-	s		1-509-184-51	CONNECTOR (RECEPTACLE) 3P
-	s		1-561-781-21	CONNECTOR, BNC (RECEPTACLE)
-	o		1-938-898-11	HARNESS (TC)
-	o		1-561-518-00	CONNECTOR HOUSING, ILG (6P)
-	o		1-938-916-11	HARNESS (DDA)
-	o		1-560-767-00	CONTACT, CONNECTOR
-	o		1-561-889-00	HOUSING, CONNECTOR 16P
-	o		1-938-917-11	HARNESS (LA I/O)
-	o		1-560-767-00	CONTACT, CONNECTOR
-	o		1-561-891-00	HOUSING, CONNECTOR 26P
-	o		1-938-918-11	HARNESS (DIGITAL I/O)
-	o		1-560-767-00	CONTACT, CONNECTOR
-	o		1-561-891-00	HOUSING, CONNECTOR 26P

ACCESSORIES

D-4. ACCESSORIES SUPPLIED

Qty SP Parts No. Description

2pcs 8 A-7810-280-C CLAMP ASSY

1pc 8 1-551-812-00 CORD, POWER (For U)

1pc 8 1-556-760-11 CORD, POWER (For EK)

1pc 8 1-534-754-00 CORD, POWER (For J)

(LEG ASSY)

8pcs 0 3-564-130-01 SHEET (B)

2pcs 8 7-623-957-51 WASHER, 6

16pcs 8 4-847-802-00 SCREW, CASE STOPPER

4pcs 0 4-920-506-01 HOLDER, LEG CAP

2pcs 0 4-920-587-01 CASTER

2pcs 0 4-920-587-11 CASTER

4pcs 0 4-920-588-01 CAP, LEG

2pcs 0 4-920-589-01 BRACKET, MAIN

1pc 0 4-920-620-01 BASE (LEFT), LEG

1pc 0 4-920-621-01 BASE (RIGHT), LEG

1pc 0 4-920-628-01 FRAME, HORIZONTAL, LEG

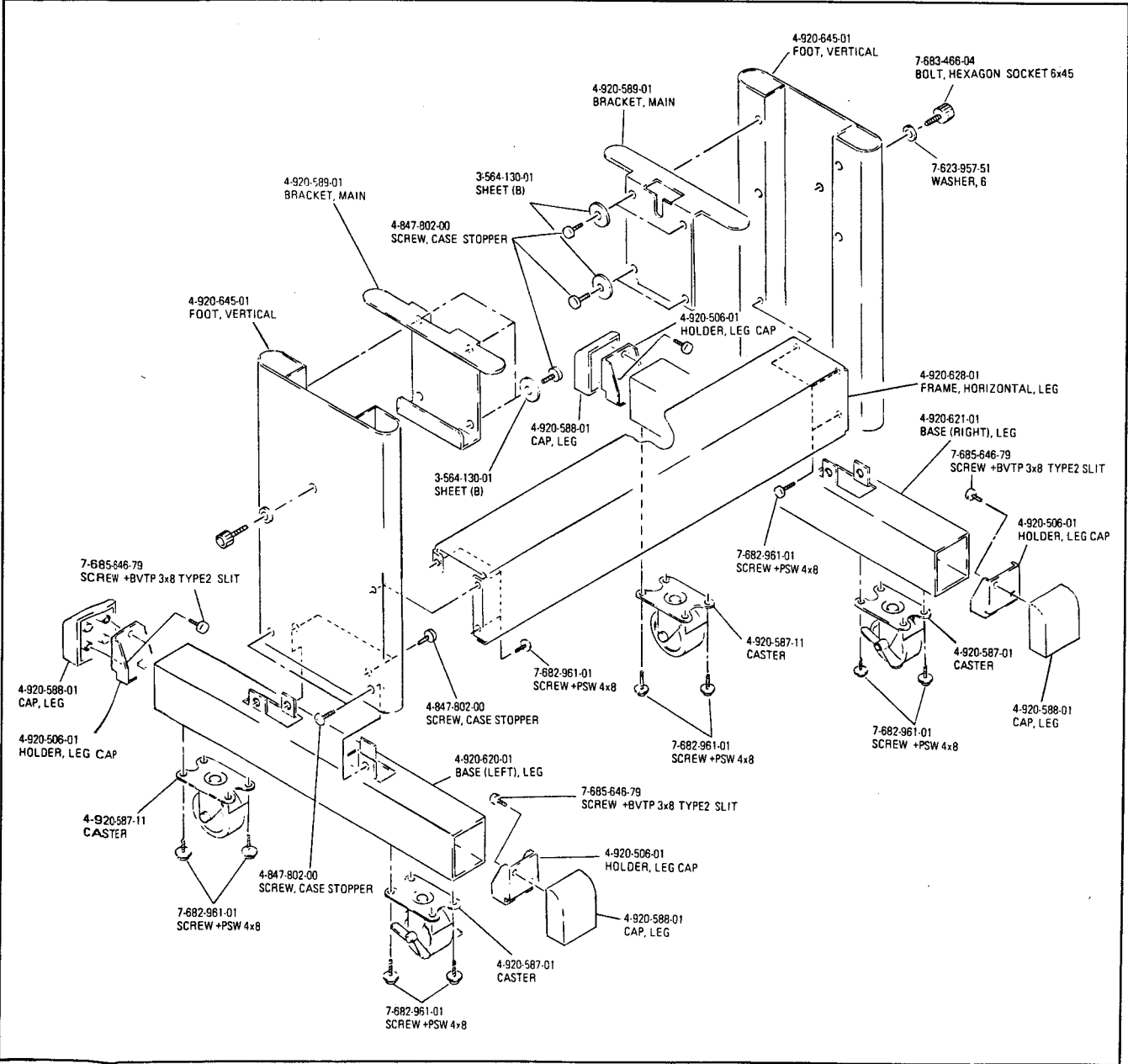
2pcs 0 4-920-645-01 FOOT, VERTICAL

22pcs 8 7-682-961-01 SCREW +PSW4x8

2pcs 8 7-683-466-04 BOLT, HEXAGON SOCKET 6x45

8pcs 8 7-685-646-79 SCREW +BVTP3x8 TYPE2 SLIT

LEG ASSY



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